DHR-1000B/NP/UX/VC

SERVICE MANUAL



AEP Model
DHR-1000NP/VC

UK Model
DHR-1000UX

French Model

Photo: DHR-1000VC: RMT-X1000B

E MECHANISM

We will inform of the BLOCK DIAGRAM in the future.

For MECHANISM ADJUSTMENTS, refer to the "DV MECHANICAL ADJUSTMENT MANUAL II" (9-973-853-11).

SPECIFICATIONS

System

Recording format DV standard (consumer Digital VCR format, SD specifications)

Video signal
DHR-1000NP/VC:
CCIR STANDARD, PAL colour
system, B/G
DHR-1000B:
CCIR STANDARD, PAL/SECAM
colour system, L and B/G
DHR-1000UX:
CCIR STANDARD, PAL colour
system, I

Usable cassettes
DV cassettes and Mini-DV cassettes

Recording time
180 minutes (when using the DV-180 cassette)

Fast-forward and rewind time Approx. 1.5 min. (with DV-180 tape)

DV cassettes and Mini-DV cassettes

Video

MICROFILM

Quantization word length 8-bit

Sampling frequency 13.5 MHz Compression system

Inner field/frame discrete cosine transform (DCT) 24.948 Mbps

Horizontal resolution More than 500 lines

Audio

Quantization word length 12-bit non-linear or 16-bit linear

Sampling frequency 32 kHz (12-bit recording mode) 48 kHz (16-bit recording mode) 44.1 kHz (16-bit, playback only) 32 kHz (16-bit, playback only)

Dynamic range More than 92 dB (16-bit recording mode, at 1 kHz)

Distortion Less than 0.0045 % (16-bit recording mode, at 1 kHz) **Tuner section**

Tuning system
PLL synthesizer system

Audio tuning system

Channel coverage DHR-1000NP/VC: VHF E2 - E12 A-H UHF E21 - E69 CATV S1 - S20 HYPER S21 - S41 CATV S01 - S05 DHR-1000B: SECAM VHF F2 - F10 UHF F21 - F69 **CATV C1 - C23** HYPER 524 - C44 VHF E2 - E12 UHF E21 - E69 CATV S01 - S03, S1 - S20 HYPER S21 - S41 DHR-1000UX:

UHF B21 -B69

RF output signal UHF channels 28 - 55

Aerial out
75-ohm asymmetrical aerial socket

Timer section

Clock Quartz locked

Timer indication 24-hour cycle

Timer setting Max. 8 programmes per month

Power back-up
Built-in self-charging capacitor
Back-up duration: up to 30 minutes at
one time

— Continued on next page —









Inputs and outputs

⊕EURO-AV (LINE-1)

21-pin Video input: pin 20 (1Vp-p, 75ohms) Audio input: pins 2 and 6 (0.5Vrms, more than 47kohms) Video/luminance output: pin 19 (1Vp-p, 75ohms) Chrominance output: pin 15 (0.3Vp-p, 75 ohms) Audio output: pins 1 and 3 (0.5 Vrms, less than 1kohm) Function switch output: pin 8, wide signal compatible

-DEURO-AV (LINE-3 IN)

21-pin Video/luminance input: pin 20 (1Vp-p, 75 ohms) Audio input: pins 2 and 6 (0.5Vrms, more than 47kohms) Chrominance output: pin 15 (0.3Vp-p, 750hm) Function switch input: pin 8, wide signal compatible

CANAL+ (DHR-1000B/NP) or PAY-TV (DHR-1000VC) **DECODER**

21-pin Video input: pin 20 (1Vp-p, 75ohms) Audio input: pins 2 and 6 (0.5Vrms, more than 47kohms) Video output: pin 19 (1Vp-p, 75ohms) Audio output: pins 1 and 3 (0.5Vrms, less than 1kohm)

DV IN / OUT

DV type 4-pin jack (1) Based on IEEE P1394

LINE-2 IN and 4

VIDEO IN, pin jack (1 each) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO IN, pin jack (2 each) Input level: 0.5Vrms Input impedance: more than 47 kohms S1 VIDEO IN, Mini DIN 4-pin connector (1 each) Y (luminance signal): 1 Vp-p, 75 ohms, unbalanced, sync negative C (colour signal): 0.3 Vp-p, 75 ohms, unbalanced

LINE OUT

VIDEO OUT, pin jack (1 each) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO OUT, pin jack (2 each) Standard output: 0.5Vrms Load impedance: 47 kohms Output impedance: less than S1 VIDEO OUT, Mini DIN 4-pin connector (1 each)

Y (luminance signal): 1 Vp-p, 75 ohms, unbalanced, sync negative Č (colour signal): 0.3 Vp-p, 75 ohms, unbalanced

Headphone jack

Stereo mini jack (1)

LANCE

Stereo mini-mini jack (1)

MIC IN

Mini jack (monoural, 1) Input level: 1mVrms for low impedance microphone

S-CONTROL IN

Mini jack (monoural,1)

General

Power requirements 220 - 240 V AC, 50 Hz

The remote commander used for each

• RMT-X1000B : DHR-1000B/NP/VC

• RMT-X1000C : DHR-1000UX

model is as follows

Power consumption 43 W

Operating temperature 5°C to 40°C

Storage temperature

-20°C to 60°C

Dimensions

Approx. 430 × 135 × 376 mm (w/h/d, including projecting parts and controls)

Approx. 10 kg

Supplied accessories

Remote commander (1) R6(size AA) batteries (2) Aerial cable (1) Mains lead (1) Audio/video cable (1) S video cable (1) DV cable (1) LANC cable (1)

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

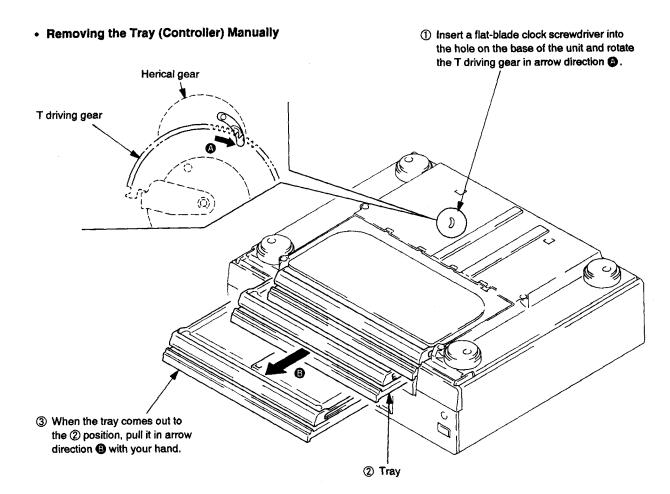
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

- Check the area of your repair for unsoldered or poorlysoldered connections. Check the entire board surface for solder splashes and bridges.
- 2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
- 3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
- 4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
- 5. Check the B+ voltage to see it is at the values specified.
- Flexible Circuit board Repairing
 - Keep the temperature of the soldering iron around 270°C during repairing.
 - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
 - Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK A OR DOTTED LINE WITH MARK A ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUB-LISHED BY SONY.

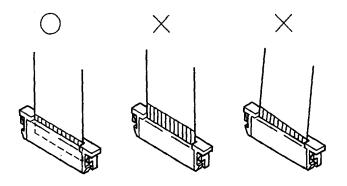
SERVICE NOTE



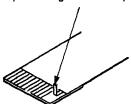
• Note for Repair

Make sure that the flat cable and flexible board are not cracked or bent at the terminal.

Do not insert the cable insufficiently nor crookedly.



Cut and remove the part of gilt which comes off at the point. (Take care that there is some pieces of gilt left inside.)



• DESTINATION DIFFERENCE SCHEMATIC COMPONENT TABLE LIST

This manual are for the DHR-1000B, DHR-1000NP, DHR-1000UX, DHR-1000VC. Check model number by loocking at the rear panel of VCR.

MODEL	В	NP	ux	VC
TB-30 BOARD (Recording/playing NICAM broadcasts)	B/G, L NICAM	B/G NICAM	I NICAM	B/G —
VA-97 BOARD Recording Canal + Programmes	0	0	_	_
VA-97 BOARD PAY-TV Programmes	· —	_	_	0
YC-144 BOARD (SECAM→PAL TRANCECODER)	0	_	_	_
VA-97 BOARD (Recording with VPS Signals)	_		-	0
VA-97 BOARD (Recording with PDC Signals)	0	0	0	0

TABLE OF CONTENTS

Section	<u>Title</u>	<u>Page</u>	Sect	<u>tior</u>	<u>Title</u>	Page
SERV	ICE NOTE		2.	כ	DISASSEMBLY	
• Ren	noving the Tray (Controller) Manually ·····	· з	2-1.	F	Removal of Top Plate and Side Panel ·····	2-1
Note	e for repair·····	· з	2-2.		Removal of Front Panel Assembly	
			2-3.	_	Removal of C Door Assembly	
			2-4.	_	Opening of TB-30 Board. (Service Position)	
1.	GENERAL		2-5.	_	Removal of JC-13 Board and DF-11 Board······	
			2-6.		Removal of MD Block Assembly	
Feature	95	· 1-1	2-7.		Service Position of RP-193 Board	2-4
Getting	Started	· 1-3			Check or Adjustment of the Recording Current) ······	2 5
Step	1: Unpacking·····	· 1-3	2-8.		Service Position of CM-49 Board	2-5
Step	2: Setting the remote commander	· 1-3			Check or Adjustment of the Servo, System Control)	
Step	3: Connecting the VCR·····	· 1-5	2-9.		Removal of Bottom Cabinet Block Assembly	
	4: Tuning your TV to the VCR ·····				Removal of Tray Block Assembly	
	5: Setting up the VCR with EASY SET UP		_	_	· · · · · · · · · · · · · · · · · · ·	
	6: Setting the clock on the remote commander		2-12.		Removal of T Motor Assembly	
-	ual setup — Presetting channels ······		2-12.			
	ual setup — Setting up ShowView ······	. •			Removal of VA-97 Board and YC-144 Board ········· nternal Views ······	
	ual setup — Changing the programme positions ······					
	ual setup — Setting the clock ······		2-13.		Circuit Boards Location	2-12
	ng the Canal Plus/PAY-TV decoder ·····					
	Operations		3.	_	OCK DIACDAMC	
	ng a tape·····		3.	-	BLOCK DIAGRAMS	
-	ording TV programmes ······		\A/a	: 11	informs of the DLOOK DIA COLUMN	
	ording TV programmes using ShowView ·····		we w	AIII I	inform of the BLOCK DIAGRAM in the future. · · · · · · · · ·	3-1
	ng the timer manually					
	nal Operations ·····			_	DIVITED MIDING DO ADDO AND	
	ng/searching at various speeds·····		4.		PRINTED WIRING BOARDS AND	
	· · · · · · · · · · · · · · · · · · ·			S	SCHEMATIC DIAGRAMS	
•	aying tape information			_		
	rding/playing stereo and bilingual programmes·······		4-1.		rame Schematic Diagram ······	
	ording TV programmes using the quick timer		4-2.		rinted Wiring Boards and Schematic Diagrams	
	ching using the index function ······			•	RP-193 Board·····	4-7
	king/changing/cancelling timer settings······			•	JC-13 (A/D, D/A Converter, Just AFC,	
	sting the picture (Y/C delay) ······				Encode, Magic, BLK-COMP,	
	nging menu options ·····				FDF-CTLG-SPCON, SFY, DV In/Out,	
	ng the cassette memory ······				Digital Audio, Audio D/A, A/D Converter,	
					Audio Core) Board ······	4-15
	re editing ······			•	JC-13 (A/D, D/A Converter) Board ·····	4-19
	ng with LANC cable·····			•	JC-13 (Just AFC, Encode) Board ·····	4-24
_	nnections ·····			•	JC-13 (Magic) Board ·····	4-29
	pying a tape·····			•	JC-13 (BLK-COMP) Board	4-33
	tting out unwanted scenes ·····			•	JC-13 (FDF-CTLG-SPCON) Board ······	4-37
	semble editing ·····			•	JC-13 (SFY) Board	4-40
	leo insert editing ······			•	JC-13, IN-51 (DV In/Out) Boards	4-43
Au	dio insert editing ······	1-31		•	JC-13 (Digital Audio) Board ·····	4-48
	ng without LANC cable······			•	JC-13 (Audio D/A, A/D Converter) Board ·····	4-51
Co	nnections ·····	1-32			JC-13 (Audio Core) Board ······	
Co	pying a tape······	1-33			DF-11 Board	
Cu	tting out unwanted scenes ······	1-33			VA-97 (YC Processor, System Control, Audio,	. •.
Vid	leo insert editing ······	1-34			Signal In/Out, Mode Control) Board	4-82
Au	dio insert editing ······	1-35		•	VA-97 (YC Processor 1) Board ······	
	r editing features ······				VA-97 (YC Processor 2) Board ······	
Au	dio dubbing·····	1-36			VA-97 (System Control) Board······	
Co	nnecting a titler or editing controller	1-38			HP-91 Board	
	nnecting a video printer				VA-97 (Audio), HP-91 Boards	
Addition	nal Information				FJ-19 Board ······	
Cass	ette care ·····	1-39			VA-97 (Signal In/Out 1), FJ-19 Boards	
Index	to parts and controls	1-40		-	The second of th	+-0/
	I chart ·····					

Section	<u>Title</u>	Page	Section	<u>1</u>	Title	Page
•	VA-97 (Mode Control 1) Board ·····	····· 4-91	6. <i>A</i>	ADJUSTMEN	TS	
•	VA-97 (Mode Control 2) Board ······	····· 4-96				
•	JK-144 Board	····· 4-98	6-1. N	MECHANISM S	ECTION ADJUSTMENTS	· 6-1
•	VA-97 (Signal In/Out 2), JK-144 Boards·······	····· 4-99			stment ·····	
•	YC-144 Board·····	····· 4-103	1.		s for Adjustment ·····	
•	CM-49 Board ·····	4-111	2.		fter operation	
•	MD-63, MD-64, MD-65, FP-406 Boards	······ 4-120				
	TK-37, CN-93 Boards		6-2. \	/IDEO SECTIO	N ADJUSTMENTS	· 6-2
•	FM-26, FL-69 Boards	4-128			efore Adjustment·····	
•	TB-30 Board	····· 4-134	2-1-1.		Jsed	
•	PS-347, PS-348, SW-274 Boards	····· 4-140	2-1-2.		of Equipment······	
	POWER BLOCK Board		2-1-3.		witches ······	
			2-1-4.		onnectors (RP-193 Board CN775) ·····	
			2-1-5.		e Input Signals·····	
5. RI	EPAIR PARTS LIST		1.	_	out	
			2.		[-
5-1. Ex	ploded Views·····	····· 5-1	2-1-8.		apes ·····	
5-1-1.	Overall Section ·····		2-1-7.	-	Level and Impedance	
5-1-2.	Front Panel Section ·····	5-2	2-1-8.		ress List ······	
5-1-3.	Bottom Plate Block Assembly				System Adjustments······	
5-1-4.	Chassis Assembly (1)·····	5-4	1.		ly Voltage Check (PS-348 Board) ·····	
5-1-5.	Chassis Assembly (2)				System Adjustments	
5-1-6.	MD Block Assembly ·····		1.		al Value Input. ······	
5-1-7.	FL Cassette Compartment Assembly		2.		Initialization	
5-1-8.	Mechanism Chassis Assembly (1)	• • • • • • • • • • • • • • • • • • • •	2. 3.	•	Adjustment (FM-23 Board)······	
• • •	(Top Side View (1))	5-8			Adjustments ······	
5-1-9.	Mechanism Chassis Assembly (2)		1.	•	osition Adjustments (RP-193 Board) ··	
•	(Top Side View (2))······	5-9	1-1.	_	osition Rough Adjustment······	
5-1-10.	Mechanism Chassis Assembly (3)		1-2.	-	osition Fine Adjustment······	
	(Top Side View (3))·····	5-10		_	Adjustments ······	
5-1-11.	Mechanism Chassis Assembly (4)		2-5-1.		rd Adjustments ······	
	(Bottom Side View (1))	5-11	1.		current Adjustment (RP-193 Board)····	
5-1-12	Mechanism Chassis Assembly (5)	•	2.		stment (RP-193 Board) ······	
0	(Bottom Side View (2)) ······	5-12	2. 3.		Level Adjustment (RP-193 Board)····	
5-2. El	ectrical Parts List·····		4.		Adjustment (RP-193 Board)·······	
	ARE LIST		4 . 5.		ment (RP-193 Board)······	
	1112 810 1	0 00	6.	=	Range Adjustment (RP-193 Board)··	
			2-5-2.	•	d Adjustments ······	
			_		•	. 0-10
			1.	/IC.13 Boar	er Reference Voltage Adjustment 1	. 8 16
			2.	•	er Reference Voltage Adjustment 2	. 0-10
			۷.		d)······	0.16
			3.	•	ump Reference Voltage Adjustment	. 0-10
			J.	-		0 10
			A	•	d)·····	. 0-10
			4.	_	lamp Reference Voltage Adjustment	
			_	•	d)	· 6-16
			5.		lamp Reference Voltage Adjustment	
				•	d)	· 6-16
			6.		Signal Level Adjustment	
			-	•	d)·····	∙ 6-17
			7.		R Signal Level Adjustment	
					Y Input Level Temporary Adjustment)	
			_	•	d)	·· 6-17
			8.		3 Signal Level Adjustment	
			_		d)	
			9.		Adjustment (JC-13 Board) ·····	
			10.		nary Adjustment (JC-13 Board) ······	
			11.		Frame Adjustment (JC-13 Board)·····	
			12.	AFC Adjustr	nent (JC-13 Board) ·····	·· 6-19

Section	<u>Title</u>	Page
2-5-3. 1.	YC-144 Board Adjustments ······ Y/C Separation Input Level Check	
2.	(YC-144 Board) ····································	
3.	Y/C Separation Chroma Level Check (YC-144 Board)	
2-5-4.	Transcoder Adjustment (DHR-1000B only) ·······	· 6-21
1.	BELL Filter Adjustment (YC-144 Board) ······	· 6-21
2.	VCO Adjustment (YC-144 Board) ······	· 6-21
3.	I REF Adjustment (YC-144 Board) ·····	· 6-22
4.	B-Y fo Adjustment (YC-144 Board) ·····	· 6-22
5.	R-Y fo Adjustment (YC-144 Board) ·····	6-23
6.	Color Difference Signal Output Level Adjustment	
	(YC-144 Board)	6-23
2-5-5.	VA-97 Board Adjustment	· 6-24
1.	AGC Adjustment (VA-97 Board)	6-24
2.	Analog E-E Y Signal Output Level Adjustment (VA-97 Board)	. 6 24
•	Analog E-E VIDEO Chroma Signal Output Level	0-24
3.	Adjustment (VA-97 Board)	. R.25
4	Analog E-E Signal Output Level Check	0-23
4.	(VA-97 Board) ·······	· 6-25
5.	Decoder VXO Freerunning Frequency Adjustment	
J.	(VA-97 Board) ······	
6.	Decoder HUE Adjustment (VA-97 Board)	
7.	REC Y Level Adjustment (VA-97 Board) ·······	·· 6-27
8.	REC CR Level Adjustment (VA-97 Board) ········	
9.	REC CB Level Adjustment (VA-97 Board)······	
10.	NPS 4 fsc Freerunning Frequency Adjustment	
	(VA-97 Board)	·· 6-28
11.	Playback Y Level Check (VA-97 Board) ·····	·· 6-28
12.	Playback Chroma Level Adjustment	
	(VA-97 Board) ·····	
13.	Playback Burst Level Adjustment (VA-97 Board)	∙∙ 6-29
2-5-6.	General Adjustment ·····	⋯ 6-30
1.	Encoder R-Y Input Level Adjustment	
	(JC-13 Board)·····	
2.	Decoder HUE Input Adjustment (JC-13 Board) ···	
2-6. A	Audio System Adjustment·····	·· 6-31
1.	Playback Level Check ·····	6-31
2.	E-E Level Check	
2-7. F	Arrangement Diagram for Adjustment Parts·······	
6-3.	SERVICE MODE	
3-1.	Adjusting Remote Commander·····	6-37
1.	Using the adjusting remote commander	6-37
2.	Precautions upon using the adjusting	
	remote commander·····	·· 6-37
3-2.	Data Processing	6-38
	Service Mode	6-39
1.	Setting the Test Mode	p-39
2.	Emergence Memory Address	ศ-39
2-1.	EMG Code (Emergency Code)	··· ʊ-39
2-2.	MOM Codes	··· 0-4U

There is the color reproduction standard frame at the back of the book.

Thank you for purchasing the Sony Digital Video Cassette Recorder (VCR). This Digital VCR has the following features:

High-quality digital picture and sound

Over 500 lines of horizontal resolution

This VCR achieves the highest resolution picture in home video

PCM-recorded digital sound

This VCR records sound as digital signals. There are two audio recording modes:

- 16-bit mode: for high sound quality. Sound is recorded and played back at 16-bit quantization and 48kHz sampling frequency, the same quality as DAT (Digital Audio Tape).
- 12-bit mode: for audio dubbing. Sound is recorded and played back at 12-bit quantization and 32kHz sampling frequency. This mode provides two stereo sound tracks.

Clear Frame Technology that enables clear still pictures

Conventional VCRs normally display still pictures by skipping every other scanning line. This VCR substitutes data for the missing lines and displays the still picture in more detail.

PALplus recording and playback

This VCR records helper signals transmitted with PALplus programmes and utilizes these signals to reproduce a high-resolution picture on a PALplus TV*.

*Depends on TV brand.

Advanced editing features

DV connector

With digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

Detachable operation panel

Controls used for editing are arranged together on a operation panel. You can also detach the operation panel for convenient operation.

The Edit Window displays up to 10 edit points during assemble editing. This feature lets you check each editing start/end point visually.

Convenient features made possible with the DV format

Quick access with sub-code data

Index signals are written separately from video/audio signals on a subcode data track. This enables the VCR to quickly locate a specific

Recording data display

With the DV format, data such as the recording date and time are recorded onto the tape. Information such as the shutter speed, programme AE mode, white balance, iris and gain are also recorded with a Sony digital camcorder. You can call up this information on the TV screen.

Cassette memory search

When you record programmes on a tape with cassette memory, the programmes are displayed as a list. Choose a programme from the list and the VCR will locate the recording. You can also search for scenes recorded in the Photo mode with a digital camcorder.

Other features

Video printing function

You can operate a video printer such as the Sony CVP-M1E with this VCR and print high-quality still pictures.

Wide-Screen Signalling (WSS)

This VCR detects WSS signals encoded with wide-screen transmissions, such as PALplus programmes, and records them on a tape. When you play back and watch the programme on certain brands of wide-screen TVs, the aspect ratio of the programme converts into 16:9 automatically.

HR-1000B/NP/UX/VC

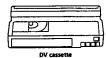
Introduction

Features (continued)

Using DV cassettes

Use D'and "D' cassettes with this VCR.

DV180 can record programmes for 180 minutes and MiniDV60 can record for 60 minutes. You can use Mini DV cassettes with digital camcorders.



You cannot use (I), Hill (ME), WESO, SWISO, (II), nor INDEA tapes on this VCR.

Mini DV cassette

Cassette memory

Cassette memory is an optional feature that is mounted on some DV cassettes and Mini DV cassettes. When you record a programme, the recording date and time, and the programmes' position on the tape are stored in the cassette memory so that you can quickly search for the programme later on.

DV tapes with cassette memory are marked with the CIII mark. CIII 4K indicates that 4 kbits of data can be stored on that cassette. This VCR can retrieve up to 16 kbits of data.

If you timer record a programme that is encoded with copyright protection signals, the VCR will continue recording but the video signal will not be recorded on tape.

Notes

- You cannot play back a DV tape recorded in other colour systems on this VCR.
- DV, "DV and CPI are trademarks.

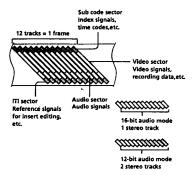
To save a recording

To prevent accidental erasure of a recording, slide in the tab on the cassette so that the red portion becomes visible. To record on a tape, slide out the tab so that the red portion is hidden.



DV recording format

The following figure shows how signals are recorded on a DV tape.



Copyright precautions

On recording

You cannot record any software having copyright protection signals on this VCR. If you start recording protected video and audio signals, a warning message appears on the TV screen and the VCR stops recording.

If you timer record a programme that is encoded with copyright protection signals, the VCR will continue recording but the video and audio signals will not be recorded on tape.

On playback

When you play back software having copyright protection signals on this VCR, you may not be able to copy it onto other equipment.

Step 1

Unpacking

Check that you have received the following items with this VCR:

Remote commander



• S video cable (Mini DIN)



· L'ANC cable

• R6 (size AA) batteries



Aerial cable



DV cable



Audio/Video cable



• Cleaning cassette

Mains lead





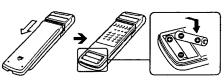
Checking your model name

The instructions in this manual are for the 3 models: DHR-1000B, DHR-1000NP, and DHR-1000VC. Check your model number by looking at the rear panel of your VCR. The DHR-1000VC is the model used for illustration purposes. Any difference in operation is clearly indicated in the text, for example, "(DHR-1000B only)."

Step 2

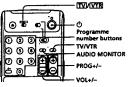
Setting the remote commander

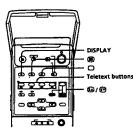
Insert two R6 (size AA) batteries by matching the + and - on the batteries to the diagram inside the battery compartment.



Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (*) can be used to operate your Sony TV. To operate other brands, see the next page.





To operate	Set TV / VTR to
the VCR	VTR and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

TV control buttons	
То	Press
Turn the TV into standby mode	δ
Switch between the TV and video input	TV/VTR
Select the programme position of the TV	Programme number buttons PROG +/-
Adjust the volume of the TV	VOL +/-
Select the sound	AUDIO MONTTOR
Call up on-screen display	DISPLAY
Turn on the TV/switch to TV mode (Teletext off)	0
Switch to Teletext	6
Use Teletext	Teletext buttons
Change the Teletext	@/@

- . With normal use, the batteries should last for approximately three to six months. When battery power
- gets low, the symbol appears in the remote commander display.

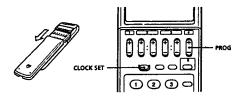
 If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- . Do not use a new battery with an old one.
- · Do not use different types of batteries.

(continued)

Getting Started

Controlling other TVs with the remote commander

The remote commander is preprogrammed to control non-Sony TVs. If your TV is listed in the table below, set the appropriate manufacturer's code number.



Hold down CLOCK SET, then press PROG repeatedly until the code number of your TV appears in the display window.

Now you can use the following TV control buttons to control your TV:

1 (on/standby), TV/VTR, programme number buttons, PROG +/-, VOL +/-, 1 (TV),

(Teletext), Teletext buttons.

Code numbers of controllable TVs

If more than one number is listed, try entering them one at a time until you find the one that works with your TV.

Manufacturer	Code number
Sony	01, 02, 03, 04, 05
Aiwa	32
Blaupunkt	10, 21
Brionvega	40
C.G.M, Mivar	09
Dual	44
Fenner	30, 31
Grundig	10, 11
Hitachi	24
Hyper	31
Inno-Hit	41
Irradio	20
III	15, 16
VC .	33
Loewe	45
Mitsubishi	27, 28, 50, 51
Nokia	15, 16
Nordmende	35, 42

Manufacturer	Code number
Orion	47, 48
Panasonic	17, 49
Philips	06, 07, 08
Phonola	18, 19
Pioneer	26
Saba	12, 13
Samsung	22, 23
Sanyo	25
Schneider	46
Seleco	14
iharp	29
Siemens	39
Sinudyne	37
Telefunken	36
Thomson	43
Toshiba	38
White Westinghouse	34

Note

- If the TV uses a different remote control system from the one programmed to work with the VCR, you cannot control your TV with the remote commander.
- . If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote commander, the code number automatically resets to 01(Sony).
 Reset the appropriate code number.

Setting the COMMAND MODE switch

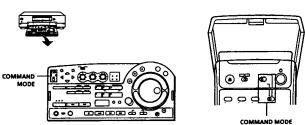
To remotely control the VCR with the commander, set COMMAND MODE on the remote commander to the same position as that on the VCR. Usually set both switches to VTR4. Change the position of the switch on the remote commander to control other Sony VCRs. If the other VCR does not have a COMMAND MODE switch, use the following settings:

VTR 1: For Sony Betamax format VCRs

VTR 2: For Sony 8mm format VCRs

VTR 3: For Sony VHS format VCRs

VTR 4-6: For Sony DV format VCRs

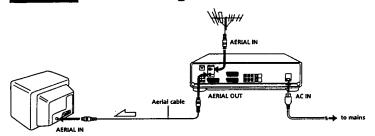


Note

 If you set the COMMAND MODE selector on the operation panel to "OFF," you can no longer control this VCR from any other Sony remote commander.

4





Signal flow:

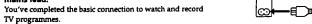
Disconnect the aerial cable from your TV and connect it to AERIAL IN of the VCR.



Connect AERIAL OUT of the VCR and the aerial input of your TV using the supplied aerial cable.



Connect AC IN of the VCR to the mains using the





Additional connections

To a TV that has a EURO-AV (Scart) connector

This additional connection improves picture and sound quality. Connect the TV as shown on the right.

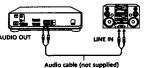
- Set RF MODULATOR switch to OFF.
- If the connector is S-video compatible, set EURO AV OUT in the SET UP MENU to S. For details, see page 45.

To a stereo system

You can improve sound quality by connecting a stereo system as shown on the right.



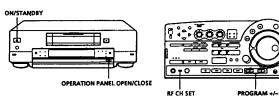
RF MODULATOR



Step 4

Tuning your TV to the VCR

If you have connected your VCR to the TV using the EURO-AV cable, skip this



Press ON/STANDBY to turn on the VCR.

Press OPERATION PANEL OPEN / CLOSE to slide out the operation panel.

3 RF CH SET

Press RF CH SET on the VCR.

The factory-preset RF channel (32 or 37) appears in the display window.

The VCR signal is output through this channel to the TV.

4

Turn on your TV and select a programme position for the VCR picture.

This channel will now be referred to as the video channel.

5

Tune the TV to the same channel as that shown in the display window so that the picture on the right appears on the TV screen.

Refer to your TV manual for tuning

instructions.

If the picture does not appear clearly, see "To obtain a clear picture from the VCR."

SONY DIGITAL VIDEO

Press RF CH SET.

You have now tuned your TV to the VCR. From now on, whenever you want to play a tape, set the TV to the video channel.

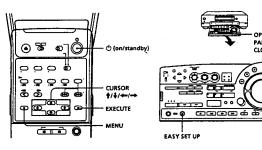
To obtain a clear picture from the VCR

If the picture does not appear clearly in step 4 above, press PROGRAM +/- in step 4, so that another RF channel appears. Then tune the TV to the new RF channel until a clear

Step 5 **Setting up the VCR with EASY SET UP**

Before using the VCR for the first time, set up the VCR using the EASY SET UP function. With this function, you can set the TV channels, guide channels for ShowView, and the clock, guided by the sequence indicated on the TV screen.





Press ((on/standby) to turn on the VCR.

Press OPERATION PANEL OPEN/CLOSE to slide out the operation panel.

3

Turn on your TV and set it to the video channel.

EASY SET UP

Press EASY SET UP.

The picture on the right appears.

(For DHR-1000B only)

Press CURSOR */* to highlight the desired system, then press EXECUTE.

- To receive broadcasts in France, select L (SECAM).
- To receive broadcasts using the PAL system (for example, in Germany or Switzerland), select B/G (PAL).
- \bullet To receive broadcasts using both systems, select L and B/G.

Note

To cancel EASY SET UP during the following procedure, press EASY SET UP.



DHR-1000NP/VC

PANEL OPEN



Step 5 Setting up the VCR sequentially (EASY SET UP) (continued)

EXECUTE

Press EXECUTE.

The VCR starts searching for all the receivable channels in your area and presets the located channels in numerical order. Some station IDs may also be preset.



During presetting, the channel being located is displayed on the TV screen. When all the channels are preset, the following screen appears.



After finishing EASY SET UP, you can add or disable the channels manually, if necessary.

See "Manual setup - Presetting channels" on page 18.

Do not exit EASY SET UP while the VCR is presetting channels. If you do so, repeat EASY SET UP from the beginning.



Using CURSOR ↑/♣/←/→, set the ShowView guide channels and change the programme positions of the stations. (If not necessary, skip this

The setting procedures are the same as those described in "Setting up ShowView" on page 20 and "Changing the programme positions" on page 22.

EXECUTE

Press EXECUTE.

The CLOCK SET menu appears.



lacktriangledown(CURSOR ()

Using CURSOR $\uparrow/\downarrow/\leftarrow/\rightarrow$, set the date and clock manually.

The setting procedures are the same as those described in "Setting the clock" on page 23.

16

EXECUTE

Press EXECUTE to finish the EASY SET UP operation.

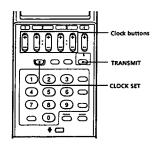
A programme position appears on the TV screen. The station ID may also appear if the VCR has detected it.



Setting the clock on the remote commander

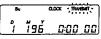
You need to set the clock on the remote commander to programme timer recordings. To set the clock, you can refer to the time on the VCR clock which was set in the EASY SET UP procedure.





Slide down the back cover of the remote commander, and press CLOCK SET.

"CLOCK" appears in the remote commander display.



3

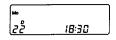
Press the clock buttons until the current time and date appear.

To set the current time and date, press D +/- for the date, START H +/- for the month, START M +/- for the year, STOP H +/- for the hour, and STOP M +/for the minutes. You can make the settings in any order.

To cycle backwards, press the minus (-) side of the buttons.

The day of the week is set automatically.

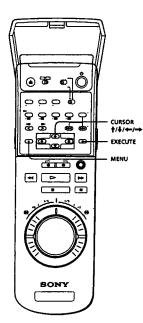
Press CLOCK SET to start the clock.



Setting the VCR clock using the clock on the remote commander

If the time on the VCR clock is incorrect due to a power failure, etc., press TRANSMIT on the remote commander. The clock data on the remote commander is transmitted to the

Manual setup — **Presetting channels**



 The menu disappears automatically if you don't proceed for more than one minute.

If some channels could not be preset using EASY SET UP, you can preset them manually. Also, if there are unwanted channels among the preset ones, you can disable the channels.

Presetting channels manually

1 Lift the front cover of the remote commander. Press MENU, then press CURSOR ↑/ to move the cursor (1) to TUNER PRESET and press EXECUTE.



- 2 (For DHR-1000B only) Press CURSOR ↑/↓/←/→ to move the cursor (1) to SYSTEM, then highlight L or B/G.
- . To receive broadcasts in France, select L.
- . To receive broadcasts using the PAL system (for example, in Germany or Switzerland), select B/G.



3 Press CURSOR ↑/↓/←/→ to move the cursor (1) to NORMAL/ CATV, then highlight NORM. To preset CATV channels, highlight CATV.



4 Press CURSOR ↑/↓ to move the cursor (1) to CHANNEL SET.



5 Close the cover of the remote commander, then press PROG +/- to select the programme position.



6 Open the front cover, then press CURSOR → to start tuning. The VCR starts searching for a channel and displays the first one it finds on the TV screen. Press CURSOR ←/→ repeatedly until the channel you want is displayed.

The channels are scanned in the following order:



DHR-1000VC/NP VHF E2 - E12 UHF E21 - E69 CATV \$1 - \$20 HYPER 521 - 541 CATV S01 - S05

If you know the number of the channel you want, press the programme number buttons. For example, for channel 5, first press "0" and then press "5."

CATV 501-503, 51-520 HYPER 521-541

- 7 To allocate another channel to another programme position, repeat steps 5 and 6.
- 8 Press EXECUTE to store all the allocated channels.

Deleting unwanted programme positions

After tuning the TV channels, you can delete unused programme positions. The deleted positions will be skipped later when you press the PROG +/- buttons.

- 1 Press MENU, then select TUNER PRESET and press EXECUTE.
- 2 Select CHANNEL SET.
- 3 Press PROG +/- until the programme position you want to delete appears beside "PROG" on the TV screen.
- 4 Press programme number button "0" twice to display the number "0" beside CHANNEL SET.
- 5 Repeat steps 3 and 4 for other positions you want to delete.
- 6 Press EXECUTE.

If the picture is not clear

Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture is not clear, you may also use the manual tuning function.

- 1 Press PROG +/- to select the programme number for which you cannot obtain a clear picture.
- 2 Press MENU, then select TUNER PRESET and press EXECUTE.
- 3 Select FINE TUNING. The fine tuning meter appears.

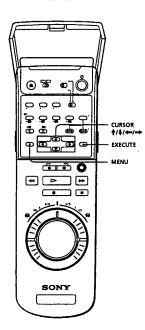


4 Press CURSOR ←/→ to get a clearer picture, then press EXECUTE.

Note that the AFT (Auto Fine Tuning) setting switches to OFF.



Manual setup — Setting up ShowView



 The menu disappears automatically if you don't proceed for more than one ShowView is a feature in Sony VCRs that simplifies programming the VCR to make timer recordings. To use ShowView, each programme position needs to be matched with its ShowView guide channel. If the guide channels were not preset in the EASY SETUP procedure, set them manually. To get the guide channel numbers, look in the programme guide for your area that features ShowView numbers.

· If you want to record satellite broadcasts using ShowView, see page

Setting the guide channels

1 Lift the front cover of the remote commander. Press MENU, then press CURSOR 1/4 to move the cursor (1) to SET UP CH AND SHOWVIEW and press EXECUTE. When using the EASY SET UP procedure, skip this step.

The SET UP CH AND SHOWVIEW menu appears. The preset channels are displayed on the screen. The station IDs and guide channels also appear if the VCR detected them in EASY SET UP. "-" in the GUIDE CH column means that the guide channel has not been preset.



2 Press CURSOR ↑/♣ to move the cursor (♣) to the line on which you want to set the guide channel. To display other pages for programme positions 6 to 60, press CURSOR **†**/**↓** repeatedly.



3 Press CURSOR → to highlight the TV channel and guide channel.



4 Press CURSOR → to highlight the guide channel only.



Notes

Notes

· When you record a satellite

satellite tuner manually. . If you use a satellite tuner

connected via the EURO-

AV (LINE-3 IN) connector,

you don't have to set up

ShowView. Just record a

satellite programme using ShowView, and the VCR

automatically records the programme from the EURO-AV (LINE-3 IN)

broadcast using ShowView, you need to select the desired channel on the

- . If you use a satellite tuner connected via the EURO-AV (Scart) connector, leave the GUIDE CH column blank (---).
- · If you inadvertently entered a guide channel number, press CURSOR 1/ repeatedly to reset the "GUIDE CH" column to "--". "-" appears between 1 and 255.
- The VCR does not allow entering the guide channel number if the same number has been set.

5 Press CURSOR **†**/**∮** to select the guide channel number assigned in the programme guide.



6 Press CURSOR ⇒ to confirm the setting. The cursor (1) appears in the leftmost column.



- 7 To set the guide channel of another station, repeat steps 2 to 6. If you want to change the programme positions of the stations, proceed to step 2 of "Changing the programme positions" on page
- 8 When you've finished, press EXECUTE to exit.

Setting up ShowView for satellite broadcasts

When your satellite tuner is connected via the AERIAL IN connector, first you have to set the programme position for each satellite channel using the TUNER PRESET menu. Then set the guide channel number for each satellite channel using the SET UP CH AND SHOWVIEW

If your satellite tuner is connected via the EURO-AV (LINE-3 IN) connector, you don't have to set programme positions nor guide channel numbers for satellite channels. Skip the following operations.

- 1 Turn on the satellite tuner.
- 2 Press MENU, then select TUNER PRESET and press EXECUTE.
- 3 Press PROG +/- to select a programme position you want to use for watching a satellite channel.
- 4 Select CHANNEL SET, then press CURSOR → to tune the VCR to the satellite tuner.

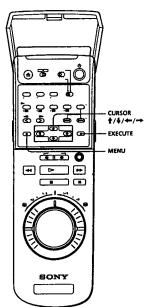
The channel number displayed beside CHANNEL SET is used for receiving all satellite broadcasts from the satellite tuner.



- 5 Press PROG +/- to select another programme position for another satellite channel, and press the programme number buttons to enter the same channel number as the one displayed in step 4. Repeat this step for all satellite channels.
- 6 Set the guide channel number for each programme position assigned to the satellite channel, following the procedures in "Setting the guide channels" on pages 20 and 21.

Getting Started

Manual setup ---Changing the programme positions



After setting the channels and ShowView guide channels, you can change the programme positions which are automatically assigned, as you like.

1 Lift the front cover of the remote commander. Press MENU, then press CURSOR ↑/↓ to move the cursor (1) to SET UP CH AND SHOWVIEW and press EXECUTE. When using the EASY SET UP procedure, skip this step.



2 Press CURSOR ↑/ to move the cursor (1) to the line on which you want to change the programme position, then press CURSOR →. The TV channel and guide channel are highlighted. To display other pages for programme positions 6 to 60, press CURSOR **↑**/↓ repeatedly.

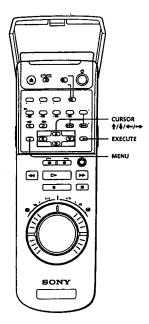


3 Press CURSOR **↑**/**↓** until the channel and guide channel line moves to the desired programme position, then press CURSOR -. The two lines exchange positions.



- 4 To change the programme position of another station, repeat steps 3 and 4.
- 5 When you've finished, press EXECUTE.

Manual setup -Setting the clock



Note

automatically if you don't

 To change the digits during setting, press CURSOR ← to return to the item to be changed, and select the digits using CURSOR 1/

You must set the time and date on the VCR to be able to use the timer recording features properly. You can set the VCR clock using the menu.

1 Lift the front cover of the remote commander. Press MENU, then press CURSOR ★/\$ to move the cursor (1) to CLOCK SET and press EXECUTE. When using the EASY SET UP procedure, skip this step.



2 Press CURSOR ⇒ to highlight the day and the day of the week.



3 Press CURSOR ↑/↓ to set the day. The day of the week is set automatically.



4 Press CURSOR → to highlight the month and set the month using CURSOR ↑/↓.



5 Set the year, hour and minutes in sequence, using CURSOR → to highlight the item to be set, and CURSOR **↑**/**↓** to select the digits.





Manual setup - Setting the clock (continued)

• If you set AUTO ADJUST to ON, the Auto Adjust feature is activated whenever the VCR is turned off. The date and time are adjusted automatically by referring to the time signal.

Notes

- If AUTO ADIUST in the CLOCK SET menu is set to ON, the VCR clock is adjusted automatically by the time signal from the TV station. Therefore, VCR clock may show a different time from that on the remote commander.
- In step 8, select a TV station that carries the same time asthat in your area.

6 Press CURSOR → to confirm the setting. The cursor (1) appears in the leftmost column.



press CURSOR ←/→ to highlight ON or OFF. If you set AUTO ADJUST to ON, the VCR clock is readjusted automatically whenever the VCR is turned off. The date and time are adjusted by referring to the time signal broadcast from a TV station.



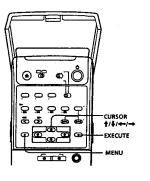
8 If you set AUTO ADJUST to ON press CURSOR \$\ \ \ to move the cursor (1) to CLOCK PROG, then press CURSOR ←/→ repeatedly until the programme position of the station that carries a time signal

If none of the stations carries a time signal, AUTO ADJUST returns to OFF automatically.



9 Press EXECUTE to start the clock.

Setting the Canal Plus/PAY-TV decoder



Note

To superimpose subtitles

while watching Canal

Plus/PAY-TV programmes,

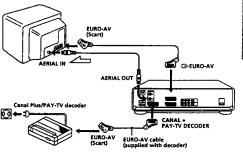
make both decoder-VCR and VCR-TV connections using 21-pin EURO-AV cables that are compatible

with the RGB signals. You

cannot record subtitles on the VCR

You can watch or record Canal Plus/PAY-TV programmes if you connect a decoder (not supplied) to the VCR.

Connection



--- : Signal flow

Setting Canal Plus/PAY-TV channels

To watch or record Canal Plus/PAY-TV programmes, set your VCR to receive the channels using the on-screen display.

- 1 Turn on your decoder.
- 2 Lift the cover of the remote commander and press MENU. The main MENU appears on the TV screen.



3 Press CURSOR ↑/♣ to move the cursor (♣) to TUNER PRESET, then press EXECUTE. The TUNER PRESET menu appears.

(e.g. DHR-1000VC)

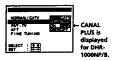


Setting the Canal Plus/PAY-TV decoder (continued)

4 Press PROG +/- to select the desired programme position.



5 Press CURSOR ↑/♦ to move the cursor (1) to CHANNEL SET, then tune in the Canal Plus/PAY-TV channels.

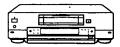


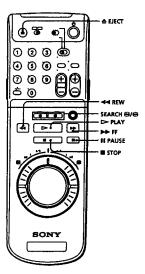
6 Press CURSOR ↑/♣/←/→ to move the cursor (1) to PAY-TV(or CANAL PLUS), then highlight ON.



7 Press EXECUTE to store the setting.

Basic Operations Playing a tape





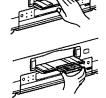
- Tips
 For further information on searching and playback functions, see "Playing/ searching at various speeds" on page 34.

 If a cassette is inserted
- already, press ⊕ to turn on the VCR, then press ▷ PLAY to play a tape.

 • Pictures with WSS signals change size automatically
- when displayed on a wide-screen TV(if your TV has this feature). To change the size, use the TV controls. For more information, refer to the TV instruction manual

Turn on your TV and set it to the video channel:

- . If the TV is connected to the VCR using the EURO-AV cable, set the TV to video input.
- · If the TV is connected to the VCR using only the aerial cable, set the TV to the programme position for the VCR.
- Press ≜ EJECT to open the cassette panel.
- Insert a cassette. The VCR turns on.



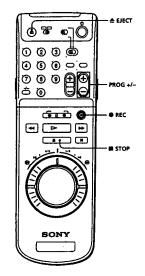
To insert a Mini DV cassette, place it in the center of the

Press > PLAY to start playing. When the tape reaches the end, it will rewind automatically. (The power remains on.)

Additional tasks

To	Press	
Stop play	■ STOP	
Pause play	II PAUSE	
Resume play after pause	II PAUSE or > PLAY	
Search forward	⊖ SEARCH during play	
Search backward	SEARCH during play	
Fast-forward the tape	▶► FF during stop	
Rewind the tape	≪ REW during stop	
View the picture during fast-forward or rewind	►► FF during fast-forward, ≪ REW during rewind	
Eject the tape	≜ EJECT	

Recording TV programmes



- Tips
 To select programme positions, you can also use the number buttons on the remote commander. For two-digit numbers, press the -/- (ten's digit) button followed by the number
- If you don't want to watch TV while recording, you can turn off the TV. When using a decoder, make sure to leave it on.

Note

- . If you insert a tape with its protect tab showing red: The VCR starts playing.
- To record on this tape, slide the tab so the red portion is not visible.

 - The VCR ejects it when
- you press REC.

- Turn on your TV and set it to the video channel:
 - . If the TV is connected to the VCR using the EURO-AV cable, set the TV to video input.
 - . If the TV is connected to the VCR using only the aerial cable, set the TV to the programme position for the VCR.
 - . When using a decoder, turn it on.
- cassette panel.
- 3 Insert a cassette. The VCR turns on. To insert a Mini DV cassette, place it in the center of the tray.
- Press PROG +/- to select the programme position you want to record.

As you press PROG +/-, the channel changes as follows:



To record a source connected to one of the inputs, select L1, L2, L3, L4 or DV.

17 60

Press • REC to start recording. When the tape reaches the end, it automatically rewinds to the beginning.

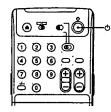
To stop recording Press # STOP.

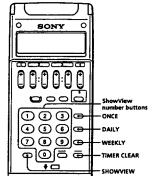
Watching a TV programme while recording another

You can watch a TV programme and record another at the same time. If the TV is connected to the VCR using the EURO-AV cable, set the TV

If the TV is connected to the VCR using only an aerial cable, press TV/ VTR to turn off the VTR indicator on the front panel, then select the desired programme position on the TV.

Recording TV programmes using **ShowView**





Notes

- · You cannot set a ShowView number in the following cases:
- When the VCR is turned
- While recording using the timer or quick timer.

 The timer will not accept
- settings in the following
- When you select DAILY for a Saturday or Sunday programme.
 - When you select DAILY
- or WEEKLY for a programme more than seven davs ahead.
- When you enter the ShowView number of a programme that has already ended.

Just enter the programme's ShowView number listed in the TV programme guide. The date, times and programme position of that programme are set automatically. You can preset up to eight programmes at a time.

Before you start...

- · Check that the clock is set to the correct time.
- Insert a tape with its protect tab not slid to red. Make sure the tape is longer than the total recording time.
- . Turn on your TV and set it to the video channel.
- Slide down the back cover of the remote commander, then press SHOWVIEW.



Press the ShowView number buttons to enter the programme's ShowView number. If you make a mistake, press TIMER CLEAR and enter the correct number.



Press ONCE, DAILY or WEEKLY:

To record	Press
Only once	ONCE
Everyday Monday to Friday	DAILY
Once a week	WEEKLY

The date, start and stop times, and programme position appear on the

Check that the information is correct. If it is not, press TIMER CLEAR to cancel.



To preset another timer setting, repeat steps 1 to 4.

Recording TV programmes using ShowView (continued)

Tip

. To cancel the procedure, press SHOWVIEW before pressing ONCE, DAILY or WEEKLY.

Note

- · If the VCR beeps
- repeatedly, this means that:
- The ShowView number is incorrect.
- ONCE, DAILY, or WEEKLY was selected incorrectly. You cannot select DAILY or WEEKLY for a programme that airs more than seven days ahead.

5 Press () to turn off the VCR. "TIMER" appears in the display window and the VCR stands by for recording.

To stop recording

To stop the VCR while recording, press STOP.

To record satellite broadcasts

If you connect the satellite tuner and the VCR, you can record satellite programmes.

- 1 Turn on the satellite tuner.
- 2 On the satellite tuner, select the satellite programme for which you wish to make a timer setting.
- 3 Follow the steps described above to set the ShowView number.
- 4 Keep the satellite tuner turned on until the VCR finishes recording the satellite programme for which you have made a timer setting.

To use the VCR after setting the timer

To use the VCR before a timer recording begins, just press . "TIMER" disappears and the VCR switches on. Remember to press () to reset the VCR to timer recording standby after using the VCR.

You can also do the following tasks while the VCR is recording:

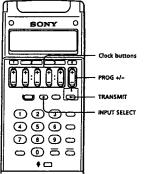
- · Reset the counter
- . Display the tape counter on the TV screen with the DISPLAY button.
- · Check the timer settings.
- · Watch another TV programme.

Timer recording with VPS/PDC signals

The broadcast systems transmit VPS (Video Programme System)or PDC (Programme Delivery Control) signals with its TV programmes. These signals ensure that your timer recordings are made regardless of broadcast interruptions.

- 1 Press () to turn on the VCR.
- 2 Press VPS/PDC to display "PDC" (for DHR-1000B/NP) or "VPS PDC" (for DHR-1000VC) in the VCR display window.

Setting the timer manually



· This VCR records in one

speed. Use the TAPE SPEED

button to select the tape speed on other Sony VHS or

If ShowView is not available in your area, follow the instructions below to set the timer to record programmes.

Using the remote commander display

This feature lets you set the timer without the TV switched on.

Before you start...

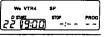
- . Check that the clock on the remote commander and the VCR are set to the correct time.
- . Insert a tape with its protect tab not slid to red. Make sure the tape is longer than the total recording time.
- . Turn on your TV and set it to the video channel.
- . To record from a decoder, turn it on.

Slide down the back cover on the remote commander.

Press D+/- to set the date to start recording.

To record the same programme every day or the same day every week, press D-. For details, see "Daily/weekly recording" on page 33.

Press START H+/- and M+/to set the start time.

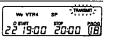


We VTR4 SP

3 Press STOP H+/- and M+/to set the stop time.



Press PROG +/- to set the programme position. To record a source connected



to one of the inputs, select L1, L2, L3, or L4.

Point the remote commander at the VCR and press TRANSMIT to transfer the setting to the VCR.

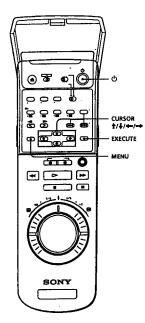
A long beep sounds to indicate that the setting has been transferred to the VCR. "TIMER" appears in the display window and the VCR stands by for recording.

To record from a decoder or other source, leave the connected equipment switched on.

To preset another timer setting, repeat steps 1 to 5.

To stop recording

To stop the VCR while recording, press STOP.



- Tips
 To set the programme position, you can also use PROG +/- or number
- To change or correct a setting before confirming it, press CURSOR — to highlight the item you want to change and reset it.

Using the on-screen menu

This feature is convenient when you want to preset several programmes at once.

Before you start...

- . Check that the clock is set to the correct time.
- . Insert a tape with its protect tab not slid to red. Make sure the tape is longer than the total recording time.
- . Turn on your TV and set it to the video channel.
- · To record from a decoder, turn it on.
- Press MENU. Press CURSOR ∱/₺ to move the cursor (I) to TIMER SET/ CHECK, then press EXECUTE.



- Set the date, start and stop times, and programme position:
 - 1 Press CURSOR → to highlight each item in turn.
 - 2 Press CURSOR ↑/↓ to set each item. To correct a setting, Press CURSOR to return to that setting and reset. To record a source connected to one of the inputs, select L1, L2, L3, L4 in the "PROG" position.



3 Press CURSOR → to confirm the setting.

The cursor (8) appears in the leftmost

To preset another timer setting, move the cursor to the next line and repeat step 2.



Press EXECUTE.

Press (b) to turn off the VCR. "TIMER" appears in the display window and the VCR stands by for recording. To record from a decoder or other

source, leave the connected equipment switched on.

To stop recording

To stop the VCR while recording, press STOP.

Dally/weekly recording



SUN-SAT MON-SAT EVERY SAT

(from Sunday to Saturday) (from Monday to Saturday) (from Monday to Friday) (every Saturday) EVERY MON (every Monday) EVERY SUN (every Sunday)



Notes

- When setting the timer with VPS/PDC signals, enter the start and stop times exactly as indicated in the TV programme guide, otherwise the VPS/PDC function won't work.
- fails to transmit VPS/PDC signals, the VCR will start using the VPS/PDC function.
- flashes in the display window inserted.
- that is encoded with copyright protection signals, the VCR will continue recording but the video and audio signals will not be recorded on tape.

Daily/weekly recording

select the recording pattern. Each time you press the button, the indication changes as shown on the left.

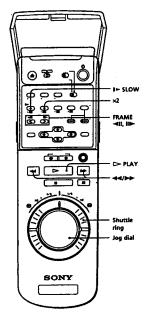
Timer recording with VPS/PDC signals

Certain broadcast systems transmit VPS (Video Programme System) or PDC (Programme Delivery Control) signals with its TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delay, early starts or broadcast interruptions. Before step 4, press VPS/PDC to display "PDC ON" (for DHR-1000B/ NP) or "VPS PDC ON" (for DHR-1000VC) after you set the recording date. If you do not want to set the VPS/PDC function, display "OFF." You cannot use the VPS/PDC function for a source connected to the LINE connectors.



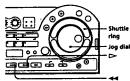
- . If the VPS/PDC signal is too weak or the broadcasting station recording at the set time without
- "TIMER" and the cassette mark when you press 🖰 with no tape
- · If you timer record a programme

Additional Operations Playing/searching at various speeds





34



If you want to hear the sound during slow motion and frame by frame set JOG WITH SOUND in the SET UP MENU to ON.

Using buttons on the remote commander

Playback options	Operation
Play at twice the normal speed	During playback, press ×2. To change direction, press FRAME ◄!! or II>.
Viewing a high-speed picture	During playback, press
Play in slow motion	During playback or pause, press ► SLOW . To change direction, press FRAME < or ►
Play frame by frame	During pause, press FRAME ≪II or II►.

To resume normal playback Press >PLAY.

Using shuttle ring

Playback options	Operation
Play at various speeds	During playback or pause: Turn the shuttle ring and hold it at the speed you want. 1/5: 1/5 of normal speed 1: normal speed 2: double speed 6: e) e: approximately 10 or 25 times normal speed The VCR switches between the two speeds as you turn the shuttle ring.
Fast-forward/rewind	During stop: Turn the shuttle ring on the VCR to ◀◀ or ▶▶ and release. Turn the shuttle ring to ◀◀ or ▶▶ again to view the picture during fast-forward or rewind.*

*This feature is not available when controlling another VCR from this machine.

To resume normal playback Press PLAY.

Using jog dial

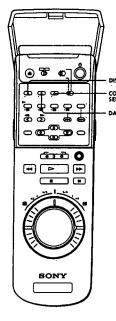
During playback or pause, turn the jog dial to play the picture at a speed slower than normal speed. This feature is useful for locating a specific point on the tape.

Rewinding the tape and starting playback automatically

When you finish watching a tape, press ▷ while pressing ◀ on the

The tape rewinds to the beginning (> flashes), then starts playing automatically.

Displaying tape information



 The display appears on the TV screen indicating information about the tape, but the information will not be recorded on the tape.

Notes

- · The counter resets to "0H00M00S" whenever a tape is reinserted.
- . The counter stops counting when it comes to a portion with no recording.

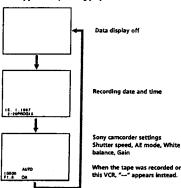
 Use the remaining time
- display as an approximate indication. In rare cases, depending on the tape type, the indication may be inaccurate.

Displaying the recording data

When recording on the digital VCR, data such as the recording date, time and audio recording mode are also recorded onto the tape at the same time. If you play back a tape recorded with a Sony digital camcorder, you can check the shutter speed, program AE mode, white balance, iris and gain.

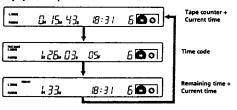
Press DATA CODE during playback.

Each time you press DATA CODE, the display changes as follows. The data appears only during playback.



Displaying the tape counter, remaining time, and time code

When a tape is inserted, each time you press COUNTER SELECT, the tape counter, the time code and the remaining time counter appear in sequence. To display them on the TV screen, press DISPLAY to turn the display on, then press COUNTER SELECT.



Using the tape counter

Press COUNTER SELECT to display the tape counter. At the point on a tape that you want to find later, press COUNTER RESET on the operation panel to reset the counter to "0H00M00S." Search for the point afterwards by referring to the counter.

Recording/playing stereo and bilingual programmes



In ZWEITON (German stereo) system

This VCR automatically receives and records stereo and bilingual programmes based on the ZWEITON system. When a stereo programme is received, the STEREO indicator in the front panel lights up; when a bilingual programme is received, the BILINGUAL indicator lights up.

To select bilingual sound while recording

Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Indicator
Main	MAIN	BILINGUAL, MAIN/L
Sub	SUB	BILINGUAL, SUB/R
Main and sub	MAIN/SUB	BILINGUAL, MAIN/L, SUB/R

In NICAM system (DHR-1000 B/NP only)

This VCR receives and records stereo and bilingual programmes based on the NICAM system (the NICAM indicator appears). When a stereo programme is received, the STEREO indicator lights up. When a bilingual programme is received, the BILINGUAL indicator lights up. To record a NICAM programme, NICAM in the SET UP MENU should be set to ON (initial setting). To check the menu setting, see page 43 for

Recording TV programmes using the quick timer



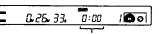


QUICK TIMER

You can also set the quick timer and start recording when the VCR is in stop mode. Recording starts when you press QUICK TIMER more than twice.

After starting recording in the normal way, you can have the VCR stop recording automatically after a specified duration.

1 While recording, press QUICK TIMER once.



Press QUICK TIMER repeatedly to set the duration.

Each press advances the time in increments of 30 minutes.

The duration decreases minute by minute to 0:00, then the VCR stops recording and turns off automatically.

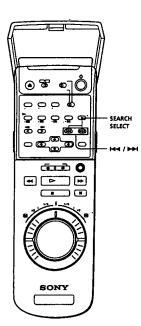
To extend the duration

Press QUICK TIMER repeatedly to set the new duration.

To stop recording

To stop the VCR while recording, press ■ STOP.

Searching using the index function



Note

 When searching without cassette memory, an index signal close to the current position may not be located. The VCR marks the tape with an index signal at the point where each recording begins. Using these signals as references, you can find a specific recording. There are three kinds of search:

- Searching the beginnings of recordings: Index search
- Searching a point on the tape where the recorded date changes: Date search
- Searching for scenes recorded in the photo mode with a digital camcorder: Photo search

On a regular tape, the recordings are located in order of their actual position on the tape. If the tape has a cassette memory, the recordings are listed in the chronological order they were made, regardless of their position on the tape.

Searching using the cassette memory

1 Press SEARCH SELECT to select the search type: INDEX, DATE or PHOTO SEARCH.



Press I≪ or ▶▶I to select a recording.

A few seconds later, the VCR starts searching and when it locates the recording, begins playback. During Photo search, the VCR pauses.



Searching without cassette memory

Press SEARCH SELECT to select the search type.

BIDEX 0 SEARCH

Press i◄◄ or ▶►i repeatedly to specify how many index signals ahead or behind you want to

> A few seconds later, the VCR starts searching backwards or forwards until the index number comes to zero, then plays back the recording. During Photo search, the VCR pauses.



- If the search type is not displayed on the TV screen, set AUTO DISPLAY to ON in the SET UP MENU.
- On the tape, the cassette memory stores up to 33 index signals. (The number changes depending on the combination of index, date, and photo data stored.) This VCR is capable of storing and retrieving up to 16 kbits of cassette memory.
- To locate recordings whose signals are not stored in the cassette memory, or to locate recordings in order of their position on the tape, set CASSETTE MEMORY to OFF in the SET UP MENU. Use the procedure for "Searching without cassette memory" to search for a

Notes

 Each programme is indexed at its beginning. If you record another programme over the beginning of the first programme, you will not be able to search the original programme.



 Searching may not be done correctly if the signal was not recorded on a Sonybrand digital video

How signals are recorded

The VCR marks the tape when:

- Recording starts from the stop mode.
- Recording is resumed after changing the programme position during recording pause.
- Timer recording starts.

There are three different signals for each search method. The type of signal recorded and where it is recorded (on the tape itself or in the cassette memory) depends on the video equipment as follows:

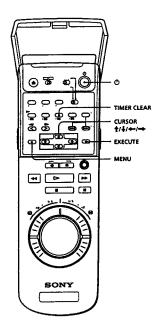
When you record on this VCR

Signals for	in cassette memory	On tape	
Index search	Yes	Yes	
Date search	No	Yes	
Photo search	No	No	

When you record with a Sony digital camcorder (DCR-VX1000E/VX700E)

Signals for	In cassette memory	On tape
Index search	No	No
Date search	Yes	Yes
Photo search	Yes	Yes

Checking/changing/ cancelling timer settings



- To check the settings, you can use the TIMER CHECK button on the rear of the remote commander. Turn on the VCR and press TIMER CHECK. The TIMER SET/CHECK screen
- In step 4, you can also use the TIMER CLEAR button on the rear of the remote

Before you start...

- . Turn on your TV and set it to the video channel.
- 1 Press () to turn on the VCR.
- Press MENU and select TIMER SET/ CHECK, then press EXECUTE.



Check the timer settings:

- . If you do not want to change or cancel the settings, press EXECUTE, then turn the VCR off to return to recording standby.
- . If you want to change or cancel the settings, press the CURSOR (↑/♣) buttons to move the cursor (I) to the setting you want to change or cancel.

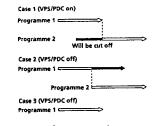


Change or cancel the timer setting:

- . To change the setting, press the CURSOR (←/→) buttons to highlight the item you want to change, and reset it using the CURSOR (↑/♣) buttons. Then, press CURSOR - to move the cursor to the leftmost column.
- · To cancel the setting, press TIMER CLEAR.

5 Press EXECUTE.

If any settings remain, turn off the VCR to return to recording standby.



Will be cleared

When the timer settings overlap

The VCR will not record overlapping programmes. When VPS/PDC is turned on, the second programme starts recording only after the first programme has finished (Case 1).

When VPS/PDC is turned off, the first programme is cut off and the second programme starts recording as programmed (Case 2). If two programmes start at the same time, the programme listed first in the menu has priority when VPS/PDC is turned off (Case 3).

Adjusting the picture (Y/C delay)

000 🗬

₩ ▷ ₩

SONY

†/‡/**+**/→

EXECUTE

When playing back a source recorded from an analog VCR or when viewing the input from the DV connector, the colour of the picture may shift right or left.

You can adjust this colour shift by using the Y/C delay function.

During playback or pause or when the DV input is displayed, press MENU.



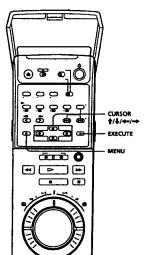
Press the CURSOR (↑/♣) buttons to move the cursor (I) to Y/C DELAY, then press EXECUTE.



Press the CURSOR (←/→) buttons to correct the colour shift of the picture.

Press EXECUTE to return to the original screen.

Changing menu options



1 Press MENU.



Press the CURSOR (↑/♣) buttons to move the cursor (I) to SET UP MENU, then press EXECUTE.





- Press the CURSOR (↑/♣) buttons to move the cursor (I) to the option you want to change. If you press 4 at the lowest line, the next page appears.
- Press CURSOR (←/→) to change the setting.
- 5 Press EXECUTE to return to the original screen.

- Video signals are composed of Y (luminance) and C (chrominance) signals. The Y/C delay function adjusts the time lag bet the Y and C signals.
- You cannot record the adjusted picture.

The menu settings are held until the AC plug is disconnected.

SONY

Changing menu options (continued)

Menu choices

Initial settings are indicated in bold letters.

PAGE 1

Menu option	Set this option to
BUZZER	 ON to output a beep sound when an illogical operation is made. OFF to deactivate it.
DIMMER	 ON to make the display window dim. OFF to make it brighter.
LANC MODE	 M to control another VCR from this VCF using the & LANC connection. 5 to control this VCR from another VCR using the & LANC connection.
SHUTTLE MODE	A to control, via the & LANC connection a VCR that doesn't have a reverse slow motion function. B to control, via the & LANC connection VCR that has a reverse slow motion function.
JOG WITH SOUND	 ON to listen to the sound when playing the tape frame by frame or at a slower speed than normal. OFF to turn off the sound.
LINE IN AUDIO	 16 to record the audio in 16-bit recording mode. 12 to record the audio in 12-bit recording mode.
AUTO DISPLAY	On to display the tape operation mode, programme number, etc. on the TV screen each time you operate the VCR. OFF to turn on /off the display with the DISPLAY button.
EDIT WINDOW	ON to turn on the on-screen window display for assemble editing. OFF to turn off the on-screen window display for assemble editing.

- Notes

 When recording TV programmes, the audio recording mode is automatically set to 16-bit mode.

 When recording from the DV connector, the audio recording mode is automatically set to the same mode as the input audio. audio.

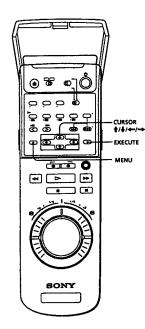
Note

• (For DHR-1000B only) This VCR converts SECAM signals to PAL colour signals. Recording and playback are made in PAL colour system.

PAGE 2

Menu option	Set this option to
HELPER	 ON when you use a wide-screen TV (16:9). OFF to eliminate flickers on the black be when you play back a PAL plus programme on a normal TV (4:3). Helpe signals will not be recorded.
WIDE PB	 ON to display a picture recorded in wid mode (16:9) on a standard TV (4:3). The picture is displayed across the upper pa of the TV screen. OFF to display a picture recorded in wid mode (16:9) on a wide-screen TV (16:9).
NICAM (DHR-1000B/NP only)	On to listen to and to record NICAM programmes. OFF if you do not need to receive NICAM programmes.
L3 IN VIDEO	 5 to select the the S video signal. NORM to select the normal video signal
L4 IN VIDEO	Sto give priority to the S video signal when both the S video and video jacks are connected. The video signal is selected automatically when only the video jack is connected. NORM to give priority to the video sign when both the S video and video jacks are connected.
EURO AV OUT	 S if the TV's EURO-AV SCART is S compatible. NORM when using a standard EURO-A' SCART cable.
CASSETTE MEMORY	 AUTO to search recordings with the cassette memory. If the tape does not have a cassette memory, the VCR will search recordings using index signals recorded on the tape itself. OFF to search recordings using the index signals recorded on the tape at all times.
AUTO COLOUR (DHR-1000B only)	 AUTO when you want to record/play back SECAM broadcasts. SECAM colour signals are converted to PAL. PAL when you do not receive SECAM broadcasts.

Erasing the cassette memory



Notes

You cannot erase the cassette memory while the protect tab on the cassette is slid to show red.

If the cassette memory is larger than 16kbits, you can select ALL DATA only.

Some DV cassettes and Mini DV cassettes have cassette memories where data such as recorded date and time is stored. If you don't need the stored data, erase the memory with the following procedure.

Press MENU.



Press the CURSOR (↑/↓) buttons to move the CURSOR(1) to CASSETTE MEMORY ERASE, then press EXECUTE.



3 Press the CURSOR (1/4) buttons to select the data to erase, then press CURSOR (←/→) to set it to

Select	To erase
ALL DATA	The entire memory
INDEX DATA	Signals for INDEX SEARCH
DATE DATA	Signals for DATE SEARCH
PHOTO DATA	Signals for PHOTO SEARCH

Press EXECUTE.

A message appears to confirm the operation.



Press EXECUTE.

The data you selected is erased, then the VCR returns to the original screen.

Editing **Before editing**

Editing methods

This section introduces you to various ways to edit tape recordings. You can cut out unwanted scenes or assemble your favourite scenes in the order you prefer. To edit tapes, you need to connect another VCR or camcorder.

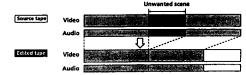
Copying a whole tape

You can copy the contents of one tape to another.



Cutting out unwanted scenes

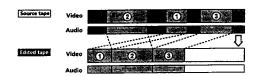
While making a copy of a tape, you can cut out unwanted scenes.



Assemble editing

Enables you to select various scenes from a source tape and record them in any order you choose.

To use this function, you need a VCR equipped with a LANC jack.



Before editing (continued)

Note

• Use a source tape recorded on this VCR for insert editing. Otherwise, editing may result in poor sound and picture. If the source tape was recorded on another VCR (including other DHR-1000s), copy the tape on this VCR and use the copied tape.

Tips

- By executing video insert and audio insert editing at the same time, you can replace both the video and the audio at the same time.
- With this VCR, you can execute V.O.S (video on sound editing), where you can record audio first, then insert video to match the previously recorded audio.

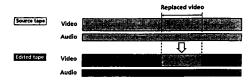
Insert editing

You can replace an existing scene with material from another recording. For insert editing, use this VCR as the recording machine.

The following methods of insert editing are available with this VCR.

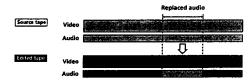
Video Insert editing

You can replace an existing scene with another recording, retaining the sound.



Audio insert editing (16-bit mode)

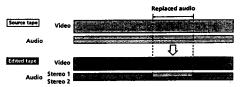
The VCR replaces the original audio with 16-bit mode audio, while retaining the picture.



Audio insert editing (12-bit mode)

The VCR replaces the original audio with 12-bit mode audio, while retaining the picture.

With 12-bit mode, you can select the track, stereo 1 or 2, to be replaced.



Note

 Use a source tape recorded on his VCR for insert editing. Otherwise, editing may result in poor sound and picture. If the source tape was recorded on another VCR (including other DHR-1000a), copy the tape on this VCR and use the copied tape.

Audio dubbing

You can add commentary or background music to a tape recorded in 12-bit audio mode. The sound is recorded on the Stereo 2 track.



12-bit/16-bit audio modes

When using the DV standard VCR, the sound is recorded in either 12bit or 16-bit mode.

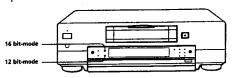
16-bit mode

The 12-bit mode consists of two separate stereo tracks - Stereo and 2.

The 16-bit mode uses the whole audio area to record one stereo track.

Checking the audio mode

During playback, the indicator corresponding to the audio mode lights up.



How the audio mode is decided

The audio mode depends on the recording source or connection.

- . When recording from the DV connector: the sound is recorded in the same audio mode as the source tape.
- · When recording from the LINE IN connectors: you can select the audio mode by setting LINE IN AUDIO in the SET UP MENU.
- . When recording TV programmes using the tuner of this VCR: the sound is recorded in 16-bit mode.

Tips

- If the other VCR has a LANC jack of 5-pin DIN type, connect with the VK-810 Control L connecting cable (not supplied).

 The jacks labeled
- CONTROL L or REMOTE have the same function as LANC iacks.
- When a stereo programme is received, the STEREO indicator lights up. When a bilingual programme is received, the BILINGUAL indicator lights up.

Notes

- With the DV connection, the sound is recorded in the same audio mode as the source tape. To record in a different audio mode from the source tape, use the LINE connection instead.
- The DV connector of this VCR outputs playback video and audio signals only. Signals from the VCR's tuner or line inputs are not output from the DV connector
- The VCR transmits the time code data only when displaying the time code.

Tip

With the DV connection, the playback VCR transmits the recording data and index data on the source tape. So when you play back the recorded tape and press the DATA CODE button, the same time and input data as on the source tape is displayed.

Connectors and features used for editing

LANC connector

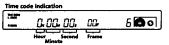
The LANC (Local Application Control) connection lets you control the connected equipment for easier editing. The LANC connection transmits signals such as control signals, status data and time code data. When connecting VCRs with the LANC cable, you need to set the LANC mode for each VCR.

- On the VCR that controls the other VCR: set LANC mode to M.
- . On the VCR to be controlled from the other VCR or editing machine: set LANC mode to S.

Time code

Time codes are signals recorded on the tape so that you can precisely specify a point on the tape. This signal is recorded on the tape for every frame(25 frames per second). On this VCR, time codes are recorded automatically during recording.

To check the time code, press COUNTER SELECT until the time code appears in the display window.



Usually, the time code is recorded consecutively from "0H00M00S00F," from the beginning of the tape. However, if there are blank sections in the tape, time codes are recorded out of sequence and assemble editing will not function correctly. To prevent this, first copy the source tape and use the copied tape for editing. The time code will be recorded consecutively on the copied tape.

DV connector

The DV connector transmits video and audio signals in digital form. The video and audio signals are sent with hardly any degradation, enabling high-quality editing. The signal flow is automatically detected so you need not make separate connections for input and output.

Because more data is sent through the DV connection compared to the LINE connection, some features are not available with this connection.

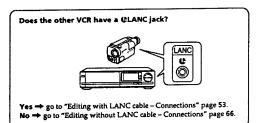
- The on-screen display of the other VCR cannot be sent with the DV input picture. To view the on-screen display, connect the other VCR directly to a TV.
- Picture adjustments made on the other VCR, such as Y/C delay, Helper, and Wide PB, cannot be sent with the DV input picture. The other VCR's playback picture is recorded on this VCR in its original
- Contents of the cassette memory are not transmitted.
- If the source tape is played back at speeds other than normal, the audio signals are not transmitted.

Before editing (continued)

Selecting the connection for your VCR

Before editing, check whether the other VCR has a **£LANC** jack or not. The operating procedures differ depending on whether or not you make the **£LANC** connection.

To use the assemble editing feature, you need to connect to a VCR equipped with a **LANC** jack.



When using this VCR as the playback machine

In the following pages, editing procedures are explained using this VCR as the recording machine. To use this VCR as the playback machine, note the following:

- When connecting the **C**LANC jack, set LANC MODE to S in the SET UP MENU.
- If the other VCR has the time code function, press DISPLAY on this VCR so that the time code counter appears in the display window.
- If you play back an audio dubbed tape and connect the other VCR to this VCR's LINE OUT jacks, set the AUDIO MONITOR selector to MIX. Then select the precise balance between the tracks with the AUDIO MIX BALANCE control.

For further instructions, refer to the manual of the recording VCR.

Editing with LANC cable

Connections

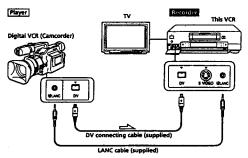
Notes

- If you connect both LANC jacks on the front and rear panel, the front one takes priority.
- When you connect the other VCR using the DV connector, the recording data, index signals and the contents of the cassette memory are not transmitted.

If the other VCR does not have a CLANC jack, go to page 66.

To a digital VCR with DV connector

With this connection, you can edit tapes with high-quality video and audio.



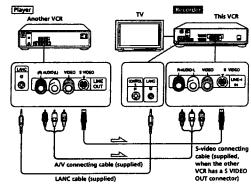
---: Signal flow

Notes

- If you connect both LINE IN
 and LINE OUT jacks of this
 VCR to the other VCR,
 select the input correctly to
 prevent a humming noise.
 If both 5 video and normal
- If both S video and normal video signals are transmitted to this VCR, the S video signal takes priority. ("S" lights in the display window.) To give priority to the normal video signal, set L3 IN VIDEO (or L4 IN VIDEO) in the SET UP MENUL to NORM.

To a VCR without DV connector

If you do not need to change connections frequently, connect to one of the LINE inputs on the rear of this VCR.



ے: Signal flow

(continued)

Note

 Distorted signals (e.g. when played back at a speed other than normal) will not be recorded properly.

Editing

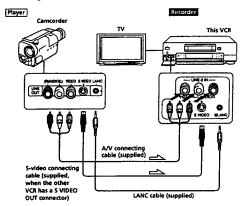
Note

 Distorted signals (e.g. when played back at a speed other than normal) will not be recorded properly.

- · Editing is not possible with a tape that is copyright
- When you finish editing, set EDIT switch to "OFF."
- LANC mode of camcorders are usually fixed to S.

To a camcorder without DV connector

The LINE-2 IN input on the front of the VCR is convenient for connecting a camcorder.



---: Signal flow

Preparation

On the player

- · Insert a source tape.
- . If the player VCR has an EDIT switch, set it to ON.
- . Turn off the on-screen display.
- Set LANC mode to S.

On the recorder (this VCR)

- Insert a tape.
- . Press INPUT SELECT so that the connector to which the player is connected appears in the display window: "DV," "L1," "L2," "L3," or "L4"
- · Set LANC mode to M.
- 1 Press MENU.
- The MENU screen appears on the TV screen.
- 2 Select SET UP MENU by pressing CURSOR (↑/↓) buttons and press EXECUTE.
- 3 Select LANC by pressing CURSOR (↑/↓) buttons.
- 4 Select M by pressing CURSOR (←/→) buttons.
- 5 Press EXECUTE.

• For the DCR-VX1000E and DCR-VX700E digital video camera, set SHUTTLE MODE to B.

Notes

- · The REC LEVEL and REC BALANCE controls do not function on a source input through the DV connector.

 With the DV connection, the
- playback VCR's AUDIO MONITOR and AUDIO MIX BALANCE do not output through the DV connector.

function on the source audio

Note

. If the other VCR doesn't work properly, confirm the shuttle mode settings on

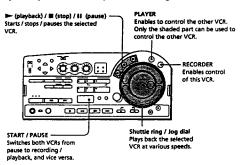
- · Set the shuttle mode.
- 1 Press MENU.
- The MENU screen appears on the TV screen.
- 2 Select SET UP MENU by pressing CURSOR (↑/♣) buttons and press EXECUTE.
- 3 Select SHUTTLE MODE by pressing CURSOR (↑/↓) buttons.
- 4 Select "A" or "B" by pressing CURSOR (←/→) buttons. A: When slow playback in reverse direction is not available on the other VCR.
- B: When slow playback in reverse direction is available on the other VCR.
- 5 Press EXECUTE.
- When you connect to the LINE 2/3/4 IN jacks, select the audio recording mode.
- 1 Press MENU.
 - The MENU screen appears on the TV screen.
- 2 Select SET UP MENU by pressing CURSOR (♠/♣) buttons and press EXECUTE.
- 3 Select LINE IN AUDIO by pressing CURSOR (♠/♣) buttons.
- 4 Select 16 or 12 by pressing CURSOR (←/→) buttons.
 - 16: When you want higher-quality sound and need not add sound later.
- 12: When you want to add sound later with insert editing or audio dubbing.

If you are going to make insert recording, select the original mode of the recording tape.

· When you connect to the LINE 2/3/4 IN jacks, adjust the recording level and balance with the REC LEVEL and REC BALANCE controls. Play back the source, then adjust the controls so that the red indicators of the level meter do not light up. Select the balance according to your taste (normally, set it to the center).

Controlling the other VCR with LANC connection

With the LANC connection, you can control the other VCR by using the operation panel of this VCR (synchronised editing feature).



55

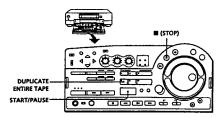
54

. The first few seconds may not be recorded.

Copying a tape

With this function, the tapes in both VCRs are rewound to the beginning, then the source tape is copied until one of the tapes reaches its end. If you want to start copying from the middle of the tape, see

Before you start editing, set up the system according to the instructions on pages 53 to 55.



Press DUPLICATE ENTIRE TAPE. The indicator lights up.

> To cancel copying, press DUPLICATE ENTIRE TAPE again.

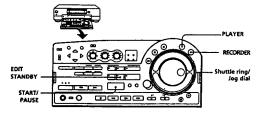
Press START/PAUSE.

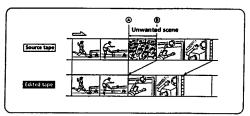
Both tapes are rewound to the beginning. The source tape starts playing, and a few seconds later, this VCR starts recording. When either tape reaches its end, both tapes stop.

To stop copying To stop while copying, press (STOP). Editing with LANC cable

Cutting out unwanted scenes

With this function, you can start editing from the middle of the tape, and cut out unwanted scenes while making a copy. Before you start editing, set up the system according to the instructions on pages 53 to 55.

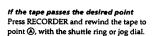




- Search for the points where you want to start playing or recording, and set both VCRs to stop.
- 2 Press EDIT STANDBY. The EDIT STANDBY indicator lights. This VCR is set to recording pause, and the other VCR is set to playback pause.
- 3 Press START/PAUSE. Playback starts on the other VCR and recording starts on this VCR.



Press START/PAUSE just before the beginning of the unwanted scene (Ø). Both VCRs are set to pause.





(continued)

56

Notes

If you press ■ STOP to stop

editing, the source picture may be recorded after it

possible if you connect this VCR to the DCR-VX1000E or DCR-VX700E digital video camera via the DV

cable and you use this VCR

as the playback machine.

stops.

This procedure is not

Cutting out unwanted scenes (continued)

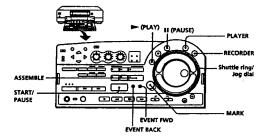
- Search for the point to resume recording (®).
 - 1 Press PLAYER and start playing the
 - 2 Locate the point with the jog dial or shuttle ring.
 - 3 Set the other VCR to playback pause.
- Press START/PAUSE to resume recording.
- To cut out other scenes, repeat steps 4 to 6.
- 8 To finish editing, press START/ PAUSE to set the VCRs to recording pause, then press EDIT STANDBY. Both VCRs stop.



Assemble editing

You can select various scenes called "events," from a source tape and record them in any order you choose. You can edit up to 10 events at a

Before you start editing, set up the system according to the instructions on pages 53 to 55.



Tip

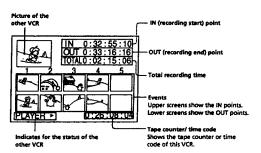
If you do not want to display the edit window, set EDIT WINDOW to OFF in the SET UP MENU. The editing procedure is the same as when editing with the Edit Window.

Note

 Horizontal lines may appear in the top left (or right) screen. However, this will not affect the edited picture.

Looking at the Edit Window

The Edit Window appears during assemble editing and shows the events you have chosen. 5 events are displayed at a time for a total of 10 events.



If you press RECORDER to select this VCR, the picture of this VCR is displayed on the right, and the IN/ OUT points and the total recording time are displayed on the left. (The characters will be indicated in grey.)

not function correctly.

This VCR may malfunction if the IN/OUT points are not separated by more than two seconds.

- . If an event you want to record is marked with a time code of less than 0:01:00:00, the event will be edited inaccurately. In this case, use the manual editing
- rewind, assemble edit may not function.
- You cannot press PLAYER while this VCR is in
- playback mode.

 Do not press MARK while the other VCR is in stop mode. Assemble editing may not function correctly.
- · If you record over a previous recording, the end of the new recording will not continue on to the original recording smoothly.

- To prevent tape damage, the tape automatically stops if recording pause continues for 5 minutes.
- · To record to the end after the last event, leave the OUT point of the last event

If the other VCR has a time code function, set it to the time code display. If not, set it to tape counter.

2 Press ASSEMBLE.

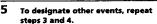
The indicator lights up.

- Designate the IN point of the first event.
 - 1 Press PLAYER and start playing the
 - 2 Locate the IN point with the jog dial or shuttle ring.
 - 3 Press MARK. The IN point is stored.



- Designate the OUT point. 1 Locate the OUT point with the jog
 - dial or shuttle ring. 2 Press MARK. The OUT point of the first event is
 - stored. The total recording time is displayed.

A few seconds later, "IN" flashes and you can designate the IN/OUT points for the next event.



You can designate up to 10 events.

To check/change events

Press EVENT BACK or EVENT FWD to display each event in turn, and change the IN/OUT points if required.

- Locate the point you want to start recording on this VCR.
 - 1 Press RECORDER.
 - 2 Press > (PLAY), then search for the recording start point with the jog dial or shuttle ring.
 - 3 Press START/PAUSE so that this VCR is set to recording pause.



The whole screen appears and assemble editing starts. When editing ends, this VCR is set to recording pause and the screen in step 6 reappears.



To assemble edit more than 10 events

1 Press ASSEMBLE.

The assemble editing mode is canceled, and the IN/OUT points stored in memory are erased.

2 Repeat steps 2 to 7.

To stop assemble editing

To stop while editing, press START/PAUSE.

This VCR is set to recording pause, and you can check the events or change the recording starting point.

When you press START/PAUSE again, editing restarts from the first event.

To end assemble editing

Press ASSEMBLE.

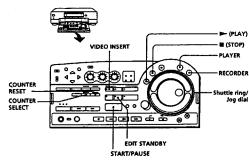
All the IN/OUT points are erased.

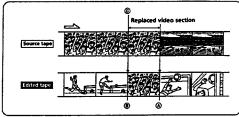
61

Video insert editing

You can replace the original picture with a scene from the source tape, while retaining the original sound.

Before you start editing, set up the system according to the instructions on pages 53 to 55.





. If you do not want to stop insert editing when the counter comes to "0H00M00S," change the counter display to the time code.

- Press COUNTER SELECT so that the tape counter appears.
- Locate the end point (A) of the scene to be recorded over.
 - 1 Press RECORDER.
 - 2 Press > (PLAY), then locate the recording end point with the jog dial or shuttle ring.
 - 3 Press COUNTER RESET.

- Do not change the counter display during insert editing. Editing may not function accurately.

 Insert editing cannot be
- made on a blank portion of the tape. When a blank is detected, the VCR stops editing.

- To execute V.O.S (video on
- sound) editing: 1 Record the audio.

video.

- 2 Follow the insert editing procedure to record the
- You can insert audio with the video by pressing INSERT STEREO1 and/or 2 in step 4.

Locate the start point (®) of the scene to be recorded over. Turn the jog dial or shuttle ring to the left, and release it at the beginning of

the scene to be recorded over.



Press VIDEO INSERT.

The indicator lights up.

Locate the playback start point (©) of the source tape.

- 1 Press PLAYER.
- 2 Press (PLAY), then locate the recording start point with the jog dial or shuttle ring.
- 3 Release the jog dial or the shuttle ring at the beginning of the source scene. The EDIT STANDBY indicator lights.



Press START/PAUSE.

The other VCR starts playback and this VCR starts recording. When the tape counter reached "0H00M00S," the EDIT STANDBY indicator turns off and this VCR stops while the other VCR continues playing. To stop the other VCR, press PLAYER, then (STOP).

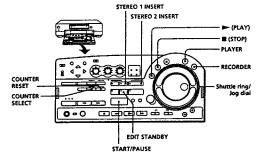


To stop recording manually, press START/PAUSE, then EDIT STANDBY.

Audio insert editing

You can replace the original sound with sound from the source tape, while retaining the original picture.

Before you start editing, set up the system according to the instructions on pages 53 to 55.



- If you do not want to stop insert editing when the counter comes to "0H00M00S," change the counter display to the time code.
- You can insert both video and audio by pressing VIDEO INSERT in step 4.

Notes

- · Do not change the counter display during insert editing. Editing may not function accurately.
- Insert editing cannot be made on a blank portion of the tape. When a blank is detected, the VCR stops editing.
- . It may take up to 7 seconds for the sound to switch to the source tape. You cannot start recording until the sound switches.
- · The inserted sound may not correspond exactly to the

1 Press COUNTER SELECT so that the tape counter appears.

- 2 Locate the end point of the scene to be recorded over. 1 Press RECORDER.
 - 2 Press > (PLAY), then locate the recording end point with the jog dial or shuttle ring.
 - 3 Press COUNTER RESET.
- Locate the start point of the scene to be recorded over. Turn the jog dial or shuttle ring to the left, and release it at the beginning of the scene to be recorded over.
- Press STEREO1 INSERT or STEREO2 INSERT as follows:

When you record from DV input Press both STEREO 1 and 2.

When you record from LINE inputs

- To record in 16-bit audio, press both STEREO1 and 2.
- To record in 12-bit audio on the stereo 1 track, press STEREO1.
- To record in 12-bit audio on the stereo 2 track, press STEREO2. For more information, refer to the chart on the next page.

A few seconds after you press the button the sound switches to the source tape.

· During recording, the indicators light according to the audio mode and the track being recorded. Example: when sound is recorded onto the stereo 2 track in 12-bit audio.



- 5 Locate the playback start point of the source tape.
 - 1 Press PLAYER.
 - 2 Press > (PLAY), then locate the recording start point with the jog dial or shuttle ring.
 - 3 Release the jog dial or the shuttle ring at the beginning of the source scene. The EDIT STANDBY indicator lights.

6 Press START/PAUSE.

The other VCR starts playback and this VCR starts recording. When the tape counter reached "0H00M00S," the EDIT STANDBY indicator turns off and this VCR stops while the other VCR continues playing. To stop the other VCR, press PLAYER, then (STOP).

To stop recording manually, press START/PAUSE, then EDIT STANDBY.

How the audio recording mode selection affects editing results

When you record from DV Input

This VCR automatically records in the same audio mode as the source tape, regardless of the LINE IN AUDIO setting in the SET UP MENU. For this connection, press both STEREO1 and 2 buttons.

When you record from LINE inputs

The sound is recorded in the audio mode selected in LINE IN AUDIO of the SET UP MENU. Normally, choose the original audio mode of the tape to be edited. In the 12-bit mode, you can select the track to be edited or replace both tracks at once.

Original audio mode of the edited tape	Menu choice	Pressed button(s)	Editing result	
			: Replaced section	
12-bit	12-bit	Stereo 1	Stereo1	
		Stereo 2	Stereo1 Stereo2	
		Stereo 1 and 2	Stereo1 Stereo2 Deleted	
-	16-bit	Stereo 1 and 2°	Stereo1 Stereo2	
16-bit	12-bit	Stereo 1 and 2*	Deleted	
	16-bit	Stereo 1 and 2*		

*Insert editing cannot be executed if you press only one button.

64

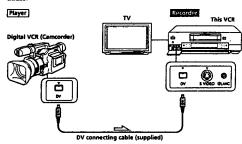
- If you connect both LINE IN and LINE OUT jacks of this VCR to the other VCR. select the input correctly to
- prevent a humming noise.

 If both S video and normal video signals are transmitted to this VCR, the S video signal takes priority. ("S" lights in the display window.) To give priority to the normal video signal, set L3 IN VIDEO (or L4 IN VIDEO) in the SET UP MENU to NORM.

If the other VCR has a CLANC jack, see page 53.

To a digital VCR with DV connector

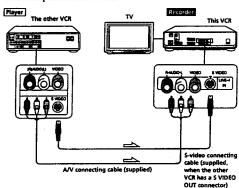
With this connection, you can edit tapes with high-quality video and



->: Signal flow

To a VCR without DV connector

If you do not need to change connections frequently, connect to one of the LINE inputs on the rear of this VCR.



->: Signal flow

 To connect a monaural VCR to the LINE-2 IN jack, leavethe red audio plug unconnected.

Note
Distorted signals (e.g. when played back at a speed other than normal) will not be recorded properly.

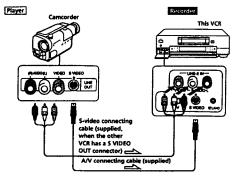
- · Editing is not possible with a tape that is copyright
- protected.

 When you finish editing, set EDIT switch to "OFF."

Notes

- The REC LEVEL and REC BALANCE controls do not function on a source input through the DV connector.
- · With the DV connection, the playback VCR's AUDIO MONITOR and AUDIO MIX BALANCE do not function on the source audio output through the DV

The LINE-2 IN input on the front of the VCR is convenient for connecting a camcorder.



-: Signal flow

Preparation

On the player

- · Insert a source tape.
- . If the player VCR has an EDIT switch, set it to ON.
- . Turn off the on-screen display.

On the recorder (this VCR)

- Insert a tape.
- Press INPUT SELECT so that the connector to which the player is connected appears in the display window: "L1," "L2," "L3," "L4," or "DV"
- . When you connect to the LINE 2/3/4 IN jacks, adjust the recording level and balance with the REC LEVEL and REC BALANCE controls. Play back the source, then adjust the controls so that the red indicators of the level meter do not light up. Select the balance according to your taste (normally, set it to the center).

1-32

· Distorted signals (e.g. when played back at a speed other than normal) will not be recorded properly.

- Search for the points where you want to start playing or recording, and set both VCRs to
- Press REC on this VCR while holding down II PAUSE. This VCR is set to recording pause.
- 3 Search for the point to start playback on the other VCR, and set it to playback pause. For best results, pause the tape a few seconds before the beginning of the
- Press the pause button on the other VCR to start playback. At the beginning of the scene you want to record, press II PAUSE on this VCR to start recording.

To stop copying

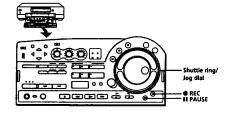
Press STOP on this VCR and the other VCR.

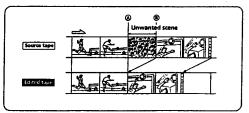
Cutting out unwanted scenes

Editing without LANC cable

With this function, you can cut out unwanted scenes while making a

Before you start editing, set up the system according to the instructions on pages 66 to 67.





- Search for the points where you want to start playing or recording, and set both VCRs to stop.
- Press REC on this VCR while holding down II PAUSE. This VCR is set to recording pause.
- Search for the point to start playback on the other VCR, and set it to playback pause. For best results, pause the tape a few seconds before the beginning of the
- Press the pause button on the other VCR to start playback. At the beginning of the scene you want to record, press II PAUSE on this VCR to start recording.

(continued)

Note

 If you start recording as soon as playback starts, the first few seconds of the picture may become distorted.

· If you start recording as soon as playback starts, the first few seconds of the picture may become

Cutting out unwanted scenes (continued)

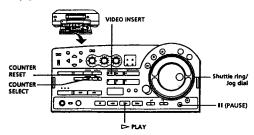
- Press II PAUSE on this VCR just before the beginning of the unwanted scene (A). This VCR is set to recording pause.
- Search for the point to resume recording on the other VCR. After searching, set the other VCR to playback pause.
- Press the pause button on the other VCR to start playback, then press II PAUSE on this VCR to resume recording.
- To cut out other scenes, repeat steps 5 to 7.

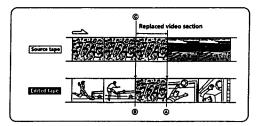
To finish editing Press STOP on both VCRs. Editing without LANC cable

Video insert editing

You can replace the original picture with a scene from the source tape, while retaining the original sound.

Before you start editing, set up the system according to the instructions on pages 67 to 68.





- If you do not want to stop insert editing when the counter comes to "0H00M00S," change the counter display to the time
- Press COUNTER SELECT so that the tape counter appears.
- 2 Locate the end point ((A)) of the scene to be recorded over.
 - 1 Press > PLAY, then locate the recording end point with the jog dial or shuttle ring.
 - 2 Press COUNTER RESET.
- 3 Locate the start point (®) of the scene to be recorded over. Turn the jog dial or shuttle ring to the left, and release it at beginning of the scene to be recorded over.



4 Press VIDEO INSERT. The indicator lights up.

(continued)

Notes

- Do not change the counter display during insert editing. Editing may not function accurately.
- Insert editing cannot be made on a blank portion of the tape. When a blank is detected, the VCR stops editing.

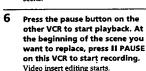
72

Editing

- To execute V.O.S (video on
- sound) editing: 1 Record the audio
- 2 Follow the insert editing procedure to record the viden.
- You can insert audio with the video by pressing INSERT STEREO 1 and/or 2 in step 4.

Locate the playback start point of the source tape (©), then set the VCR to playback pause.

For best results, pause the tape a few seconds before the beginning of the scene.



When the tape counter reaches

"00H00M00S," recording stops

Press # STOP on the other VCR.

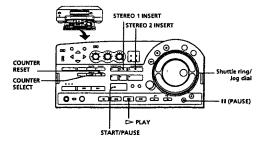
automatically.



Audio insert editing

You can replace the original sound with sound from the source tape, while retaining the original picture.

Before you start editing, set up the system according to the instructions on pages 66 to 67.



Tips

- · You can insert both video and audio by pressing VIDEO INSERT in step 4.
- . If you do not want to stop insert editing when the counter comes to "0H00M00S," change the counter display to the time

Notes

- . Do not change the counter display during insert editing. Editing may not function accurately.
- Insert editing cannot be made on a blank portion of the tape. When a blank is detected, the VCR stops editing.

 It may take up to 7 seconds
- for the sound to switch to the source tape. You cannot start recording until the sound switches.
- . The inserted sound may not correspond exactly to the

- Press COUNTER SELECT so that the tape counter appears.
- Locate the end point of the scene to be recorded over.
 - 1 Press > PLAY, then locate the recording end point with the jog dial or shuttle ring.
 - 2 Press COUNTER RESET.
- Locate the start point of the scene to be recorded over. Turn the jog dial or shuttle ring to left, and release it at the beginning of the scene to be recorded over.
- Press STEREO1 INSERT or STEREO2 INSERT as follows:

When you record from DV input Press both STEREO 1 and 2.

When you record from LINE inputs

- To record in 16-bit audio, press both STEREO1 and 2.
- To record in 12-bit audio on the stereo 1 track, press STEREO1.
- To record in 12-bit audio on the stereo 2 track, press STEREO2. For more information, refer to the chart on the next page.

A few seconds after you press the button the sound switches to the source tape.

(continued)

Audio insert editing (continued)

Locate the playback start point of the source tape (©), then set the VCR to playback pause.

For best results, pause the tape a few seconds before the beginning of the scene.

Press the pause button on the other VCR to start playback. At the beginning of the scene you want to replace, press II PAUSE on this VCR to start recording. Audio insert editing starts.

When the tape counter reaches "0H00M005", the recording tape stops automatically.

Press STOP on the other VCR.

How the audio recording mode selection affects editing results

When you record from DV input

This VCR automatically records in the same audio mode as the source tape, regardless of the LINE IN AUDIO setting in the SET UP MENU. For this connection, press both STEREO1 and 2 buttons.

When you record from LINE inputs

The sound is recorded in the audio mode selected in LINE IN AUDIO of the SET UP MENU. Normally, choose the original audio mode of the tape to be edited. In the 12-bit mode, you can select the track to be edited or replace both tracks at once.

Original audio mode of the edited tape	Menu choice	Pressed button(s)	Editing Result
			: Replaced section
12-bit	12-bit	Stereo 1	Stereo1
		Stereo 2	Stereo1 Stereo2
		Stereo 1 and 2	Stereo1 Stereo2 Delet
	16-bit	Stereo 1 and 2*	Stereo1
16-bit	12-bit	Stereo 1 and 2*	L Delet
	16-bit	Stereo 1 and 2°	

*Insert editing cannot be executed if you press only one button.

Other editing features

Notes

Audio dubbing

· You cannot use the audio dubbing feature on a tape recorded in 16-bit audio When a microphone and a source to LINE-2 IN are

both connected, the mixed sound of the two sources is

microphone is recorded in

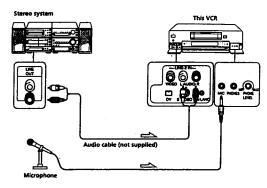
The audio from the

monaural.

You can add music or commentary to a tape recorded in 12-bit audio mode.

Music or narration is recorded on the stereo 2 track, while the original sound on stereo 1 track remains.

Connection



---: Signal flow

Preparation

- · Insert a prerecorded tape into this VCR.
- . Press INPUT SELECT so that "L2" appears in the display window.
- · Set the audio recording mode to 12-bit.
- 1 Press MENU.
- The MENU screen appears on the TV screen.
- 2 Select SET UP MENU by pressing the CURSOR (↑/♣) buttons and press EXECUTE.
- 3 Select LINE IN AUDIO by pressing the CURSOR (↑/♣) buttons.
- 4 Select "12" by pressing CURSOR (←/→) buttons.
- · Adjust the recording level and balance with the REC LEVEL and REC BALANCE controls.

While playing the source or speaking into the microphone, adjust the controls so that the red indicators of the level meter do not light up. Select the balance according to your taste (normally, set it to the center).

(continued)

 During recording, the indicators light according to the audio mode and the track being recorded. Example: when sound is recorded onto the stereo 2 track in 12-bit audio.

> PCM MODE 129f STEREO I STEREO

- . If you do not want to stop insert editing when the counter comes to "0H00M00S," change the counter display to the time code.
- · For fade-in operation, turn the REC LEVEL control clockwise from the zero
- Por fade-out operation, turn the REC LEVEL control counter-clockwise to the zero point.

· The inserted sound may not correspond exactly to the

Press COUNTER SELECT so that the tape counter appears.

- Locate the end point of the scene to be recorded over.
 - 1 Press > PLAY, then locate the recording end point with the jog dial or shuttle ring.
 - 2 Press COUNTER RESET.
 - 3 Press II PAUSE.
- Locate the start point of the scene to be recorded over. Rotate the jog dial or shuttle ring to left, and release it when the desired scene appears on the TV screen.

Stop playback of the audio

equipment.

- Press AUDIO DUB.
- Press II PAUSE on this VCR and start playing the audio source or speaking into the microphone. The source audio is recorded on the stereo 2 track of the tape, while the picture appears on the TV screen (the audio on the stereo 1 track is not played). When the tape counter reaches "0H00M00S," recording stops automatically.

Note

. Do not switch the tape counter to another time counter during inseft editing. The editing may end inaccurately.

Tip

• You can also use the
AUDIO MONITOR selector to monitor the sound when recording from the DV input. The selector setting will not affect the sound recorded.

Listening to the inserted/dubbed sound

Start playback of the inserted/ dubbed tape.

Set the AUDIO MONITOR selector to the track you want to hear:

- For Stereo 1, set to STEREO 1.
- For Stereo 2, set to STEREO 2.
- · For both stereo 1 and stereo 2 tracks, set to MIX.

AUDIO MONITOR



When you select "MIX," you can adjust the audio balance between the stereo 1 and stereo 2 tracks with the AUDIO MIX BALANCE control.

The PCM MODE indicators light according to the contents of the tape.

Lights while playing back a tape recorded in 16-bit mode.

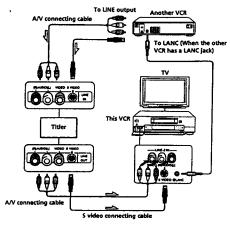


To use a titler or editing controller, connect them as follows.

Connecting a titler or Connecting a titler editing controller

Notes

- You cannot make the DV connection when using the
- To use a digital SEG, connect it with the LINE jacks. You cannot make the DV connection.



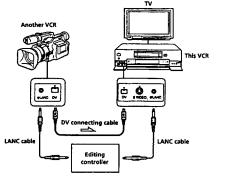
->: Signal flow

Notes

- When you connect an editing controller with the DV connection, you cannot
- SEG in addition.

 When this VCR is set up as the recording machine without the DV connection, occasionally, editing may start about one second later than the IN point. In this case, try changing the player search mode (FF/ REW or CUE/REV) on the editing controller.
- Connections differ depending on the controller model. Refer to the manual of the connected equipment.
- To use a controller equipped with a titler function, you need to make audio/video connections in addition to the connection shown on the right. While recording press INPUT
 SELECT on this VCR to
 select the video that you
 want to record.

Connecting an editing controller



-->: Signal flow

Preparation

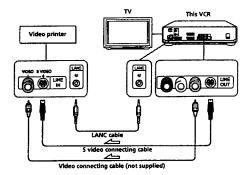
- . When you make the LANC connection, follow "Preparation" on page
- . When you don't make the LANC connection, follow "Preparation" on page 66.

For further instructions, refer to the manual of the connected equipment.

You can make prints from a camcorder recording by using a video printer, such as the CVP-M1E.

Connecting a video printer

Connection



-->: Signal flow

Operation

1 Set the LANC mode of this VCR to S. For details, see page 43.

Locate the scene to print. Locate the picture with the jog dial or shuttle ring.

3 Press the PRINT button on the remote commander. For other functions, operate the controls on the video printer.

See page 38.

Cleaning the terminal

If the terminal of the DV or Mini-DV cassette gets dirty, or dust sticks to the terminal, the VCR may not work correctly.

Clean the connector with the swab once every ten times you eject a cassette.



When affixing a label on the cassette

Be sure to affix a label on only the location as illustrated below so as not to cause malfunction of the VCR.



After using a cassette

After use, please be sure to rewind the tape completely (to prevent picture and sound distortion). Return to its case and store in upright position.

Tip

• When printing a still picture recorded with the Photo Recording feature cameorder, you can search quickly by using PHOTO SEARCH function.

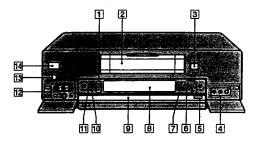
Note

 When the VCR is connected without the LANC cable, refer to the operating instructions of the video

Index to parts and controls

Refer to the pages indicated in () for details.

Front panel



- 1 16BIT/12BIT indicator (50) 2 Cassette panel (27)

A



- MIC (microphone) jack (75)
 HEADPHONES jack
 CL button (82)
 VOL (headphone volume level) control

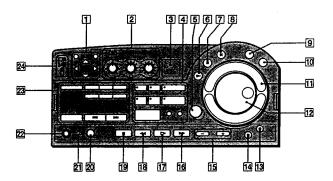
- 8 Display window (89) 9 Operation panel (55, 87)
- WIDE indicator (27)
 PALplus indicator (4)

- 12 See section B below.
- Remote sensor
 POWER switch



- 1 LINE-2 IN audio/video input jack (54, 67)
- 2 & LANC jack (53, 54)
- 3 LINE-2 IN S VIDEO input connector (54, 67)
 4 DV connector (53)

Operation panel



- 1 Menu buttons (MENU, CURSOR and EXECUTE buttons) (43)
- See section on the next page.PCM MODE indicators (77)
- 4 See section 1 on the next page.
- MARK button (59)(55)(55)

- 6 ► (play) button (55)

 7 (stop) button (55)

 8 (pause) button (55)

 9 PLAYER button (55)

 10 RECORDER button (55)

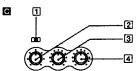
 11 Shuttle ring (34)

 12 Jog dial (34)

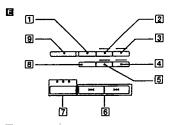
- 13 REC button (28)
- 14 II PAUSE button (27) 15 PROGRAM +/- buttons (28)
- 16 >> FF button (27)
- 17 > PLAY button (27)
- 18 **◄◄** REW button (27)
- 19 # STOP button (27)
- EASY SET UP button (15)
- 21 RF CH SET button (13)
 22 QUICK TIMER button (37)
- 23 See section 2 on the next page.
- 24 COMMAND MODE switch (11)

(continued)

Index to parts and controls (continued)



- AUDIO MONITOR selector (77)
 AUDIO MIX BALANCE control (76)
 REC BALANCE control (76)
 REC LEVEL control (76)

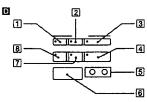


- 1 TV/VTR button (28)
 2 AU (audio) MONITOR MAIN/SUB button (36)
 3 VPS/PDC button (30, 33)
 4 COUNTER RESET button (35)

- S COUNTER SELECT button (35)

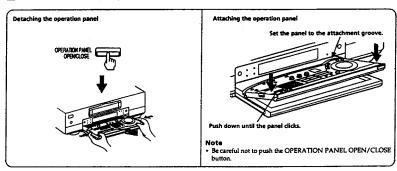
 S IN → No. (index search previous/next) buttons (38)

 SEARCH SELECT button and indicators (38)
- B DISPLAY button (35)
- 9 INPUT SELECT button (54, 67)

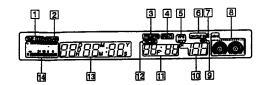


- 1 VIDEO INSERT button (62, 71)
- 2 STEREO 1 INSERT button (64, 73)
- 3 STEREO 2 INSERT/AUDIO DUB button (64, 73)
 4 ASSEMBLE button (59)
 5 EVENT BACK/FWD buttons (60)

- EVENT START/PAUSE button (55)
 EDIT STANDBY button (57, 62, 64)
 DUPLICATE ENTIRE TAPE button (56)



Display window



- 1 TIME CODE indicator (35, 51)
 2 REMAIN (remaining time) indicator (35)

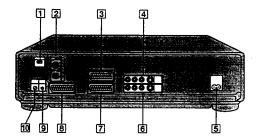
- 21 REMAIN (remaining time) indic 3 TIMER indicator (30) 4 REC (recording) indicator (28) 5 VPS/PDC indicator (30, 33) 6 DV OUT/IN indicator (54, 67) 7 S video input indicator (53, 66) 8 Cassette indicator

- 9 RF indicator (13)
- Programme position indicator (13, 28)
- 11 Current time/Quick timer/Frame indicator (35, 37,
- NICAM indicator(36)
 Tape counter (35, 51)
 Peak level meter

(continued)

89

Rear panel

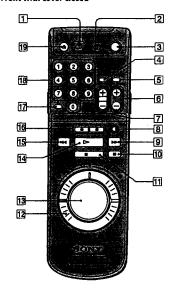


- RF MODULATOR ON/OFF switch (12)
 AERIAL IN/OUT connectors (12)
 GEURO-AV (LINE-3 IN) connector (21)
 LINE-4 IN jacks (53, 66)
 AC IN connector (12)

- 6 LINE OUT jacks (12)
- 7 G-EURO-AV (LINE-1) connector (12) B CANAL PLUS (For DHR-1000B/NP),
- PAY-TV (For DHR-1000VC) connector (25)
- 9 **C**LANC jack (53)
- 10 CONTROL S IN jack

Remote commander

Front with cover closed

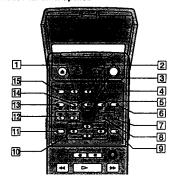


- 1 TV/VTR switch (9)
- 2 COMMAND MODE switch (11)
- 3 U(on/standby) button (9)
- 4 AUDIO MONITOR buttons (36)
- 5 TV/VTR button (9)
- 6 PROG (programme) +/- buttons (28)
- 7 VOL (volume) +/- buttons (for TV only) (9)

- 10 11 PAUSE button (27)
- 11 STOP button (27)

- 12 Shuttle ring (34)
 13 Jog dial (34)
 14 → PLAY button (27)
 15 ← REW button (27)
- 16 SEARCH ⊕/⊕ buttons (27)
- 17 -/-- button (28)
- 18 Number buttons (28)

Front with cover opened



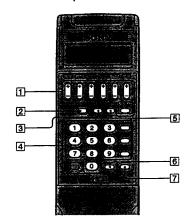
- 1 DATA CODE button (35)
- 2 COUNTER SELECT button (35)
- 3 TIMER CLEAR button (40)
 4 COMMAND MODE switch (11)
 5 PRINT button (80)
- 6 SEARCH SELECT button (38)
- 7 SEARCH ►► button (38)
- B SEARCH I button (38)
- 9 EXECUTE button (43)
- © CURSOR ↑/↓/←/→ buttons (43)
 MENU button (43)
- 12 FRAME ◀II/II► buttons (34)
- 13 I► SLOW button (34)
- 14 x2 button (34)
- 15 DISPLAY button (35)

([3], [5], [13], [14], are also used as Teletext buttons for TV)

(continued)

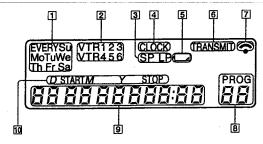
Index to parts and controls (continued)

Rear with cover opened



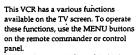
- Timer recording/clock buttons (17, 31) DAY +/- button START +/- buttons STOP +/- buttons PROG (programme position) button TRANSMIT button
- 2 CLOCK SET button (17)
 3 INPUT SELECT button (31)
 4 SHOWVIEW buttons (29)
- SHOWVIEW button SHOWVIEW number buttons ONCE button
 - DAILY button WEEKLY button
- [5] TAPE SPEED button (31) (for other Sony VHS or 8mm VCRs)
- 6 TIMER CHECK button (40)
- 7 TIMER CLEAR button (40)

Remote commander display



- 1 Current day of the week/progamme recording pattern indicator (17, 31)
- 2 Command mode indicator (11) 3 Tape speed indicator (31)
- (for other Sony VHS or 8mm VCRs)
- 4 CLOCK indicator (17)
 5 (a) (battery capacity low) indicator (9)
- [6] Indicates that data can be transmitted
- 7 Indicates that data has been transmitted
- 8 Programme position indicator (31)
 9 Current time and date/programme recording time/ SHOWVIEW number indicator(17, 29, 31)
- 10 D(day)/M(month)/Y(year) indicator (17)

MENU chart



Refer to the pages indicated in () for

TIMER SET/CHECK (32)

Setting timer recordings. You can also check, change and cancel the recordings, including the ones set with SHOWVIEW feature.

SET UP MENU (43)

Changing the optional setup choices.



TUNER PRESET (18)

Tuning the VCR to recerive broadcast channels.

SET UP CH AND SHOWVIEW (20) Setting guide channels to the broadcasts you preset, or changing the programme position order.

CLOCK SET (23)

Setting the date and time. You can also enable/disable the auto adjust feature.

Y/C DELAY (42)

Adjusting the difference in time between Y(luiminance) and C(chrominance).

CASSETTE MEMORY ERASE (46)

Erasing the contents of the cassette memory of the DV or Mini DV

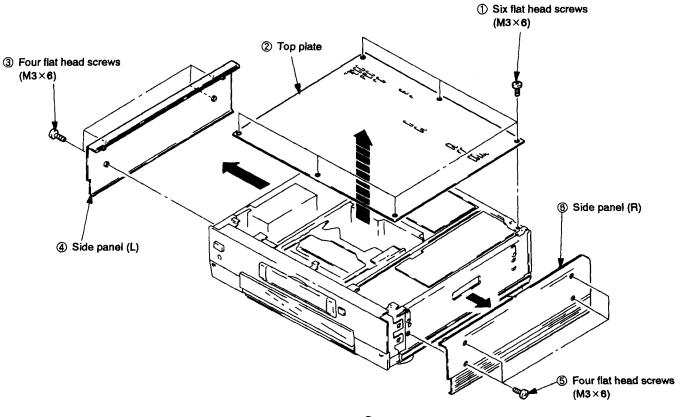


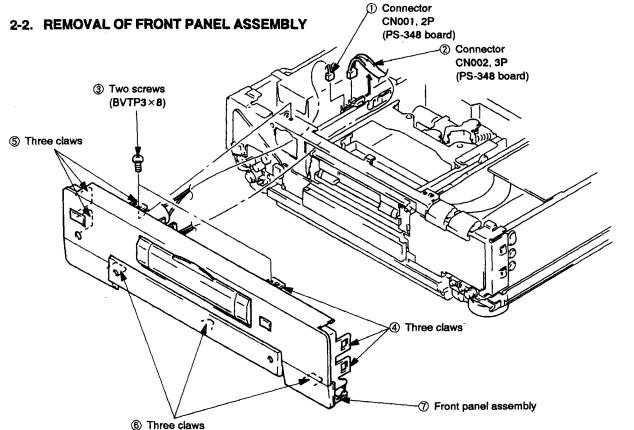
PLAY OR DV INPU

AUTO ADJUST DN DR

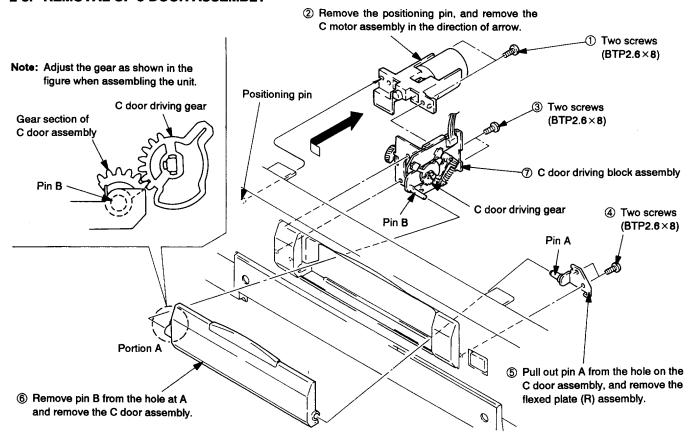
SECTION 2 DISASSEMBLY

2-1. REMOVAL OF TOP PLATE AND SIDE PANEL

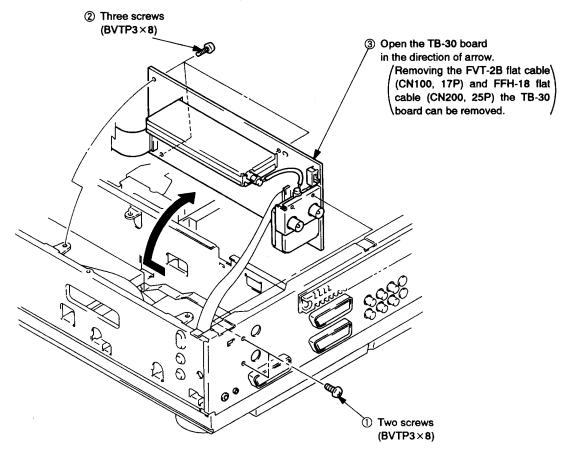




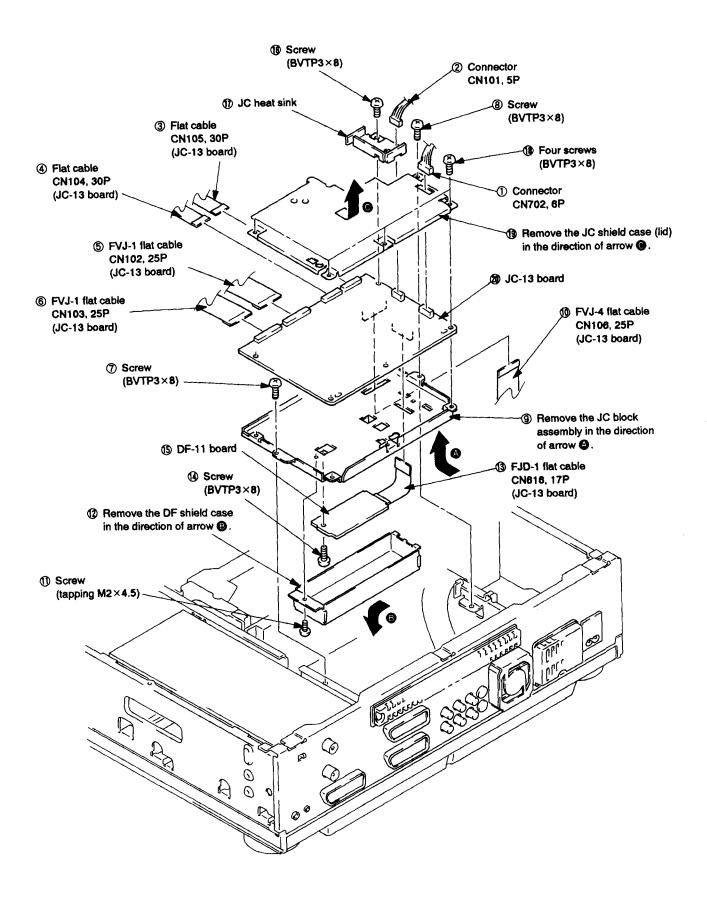
2-3. REMOVAL OF C DOOR ASSEMBLY



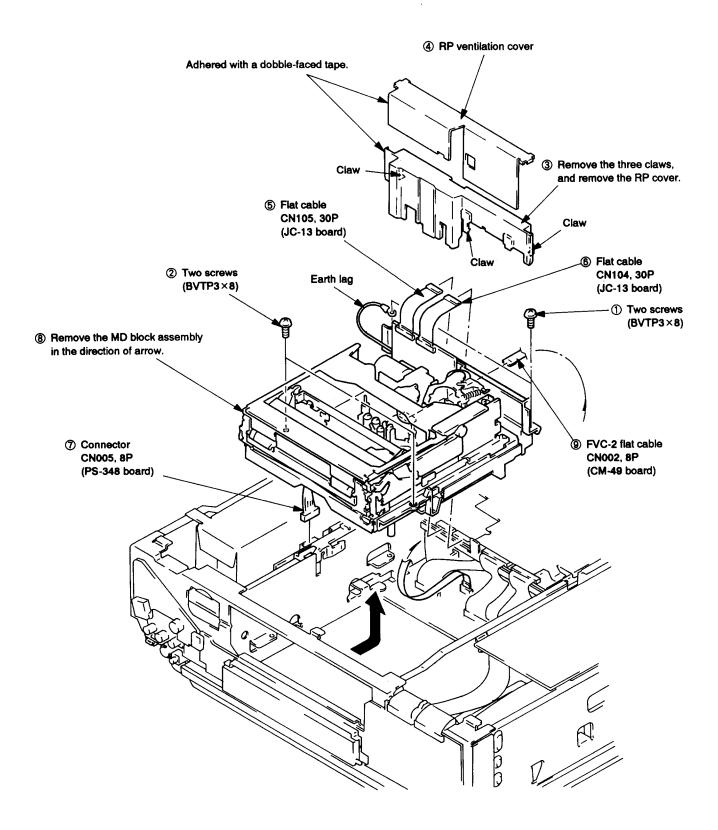
2-4. OPENING OF TB-30 BOARD. (SERVICE POSITION)

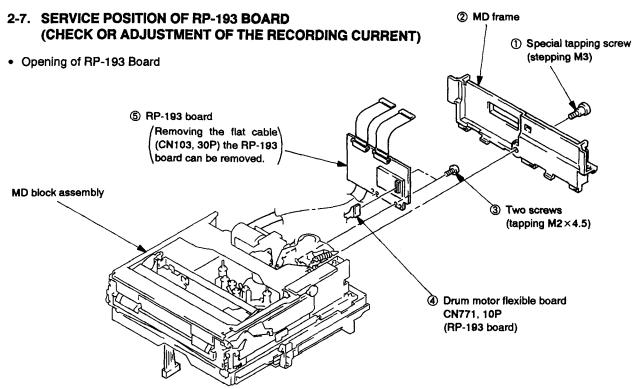


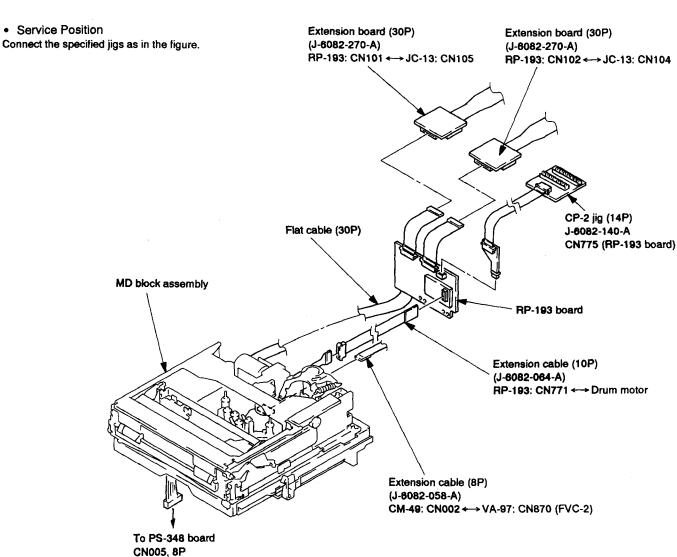
2-5. REMOVAL OF JC-13 BOARD AND DF-11 BOARD



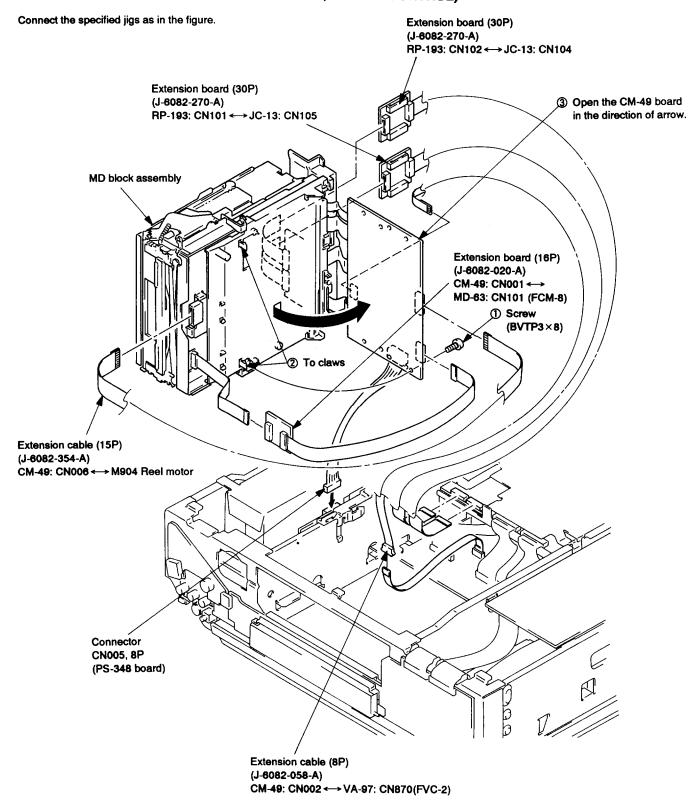
2-6. REMOVAL OF MD BLOCK ASSEMBLY



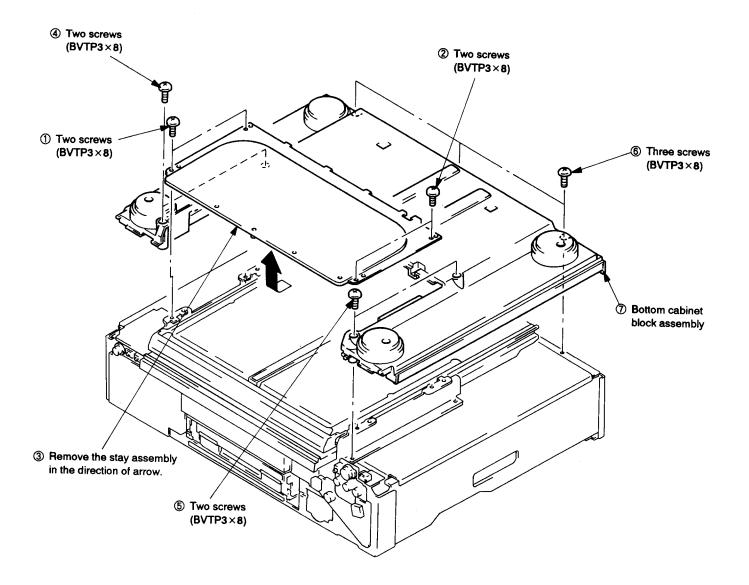




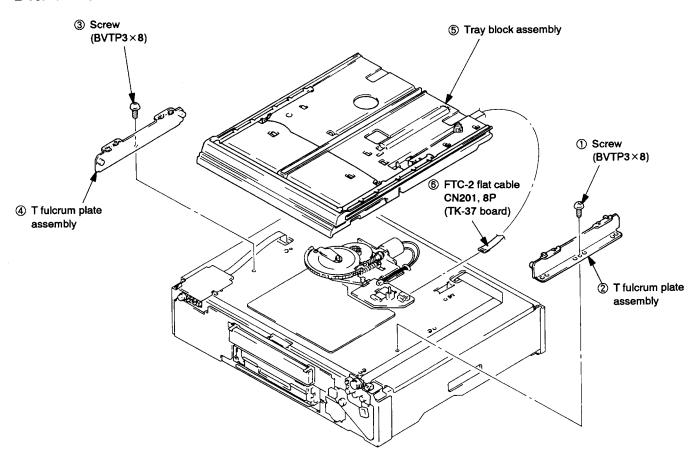
2-8. SERVICE POSITION OF CM-49 BOARD (CHECK OR ADJUSTMENT OF THE SERVO, SYSTEM CONTROL)



2-9. REMOVAL OF BOTTOM CABINET BLOCK ASSEMBLY

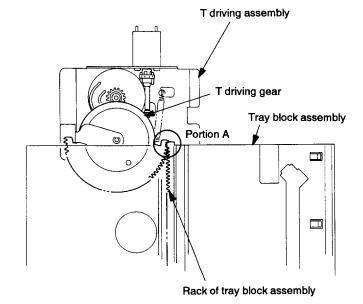


2-10. REMOVAL OF TRAY BLOCK ASSEMBLY

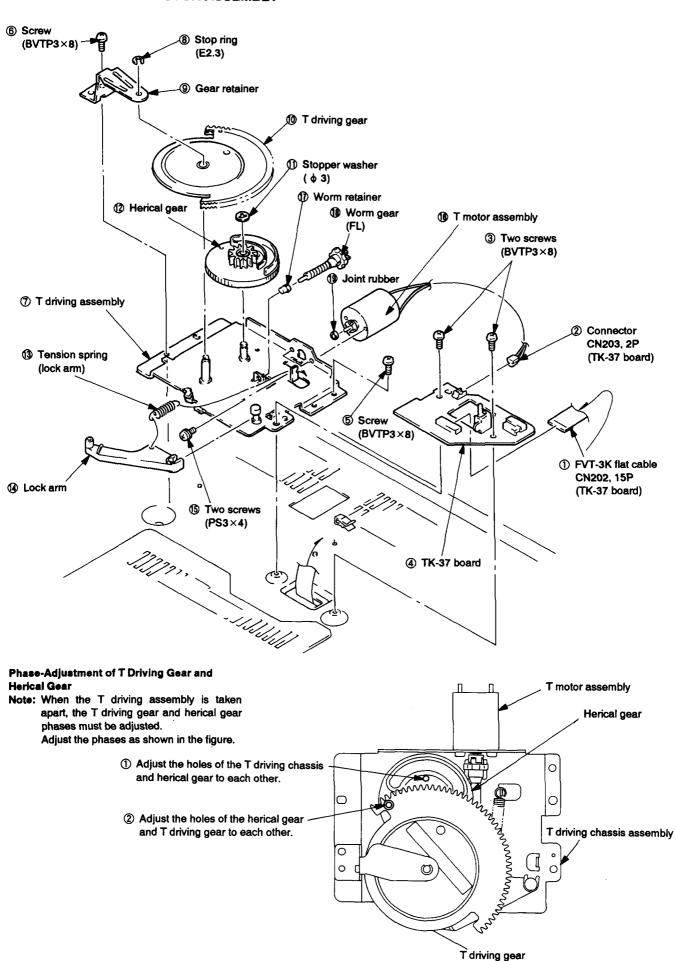


Installing procedure of the tray block assembly

- 1. Connect the connector of FTC-2 flat cable ⑥.
- 2. Install the two T fulcrum plate assemblies ②, ④.
- 3. Fasten two screws ①, ③.
- Insert the tray block assemby ⑤ from the front. (The rollers of the T fulcrum plate assembly should be inserted in the grooves at the two sides of the tray.)
- 5. Rotate the T driving gear so that it engages at A.
- 6. Insert the tray block assemby (5) further.

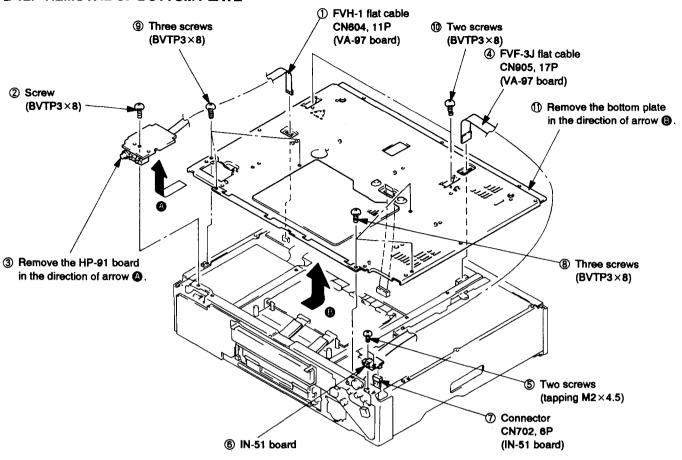


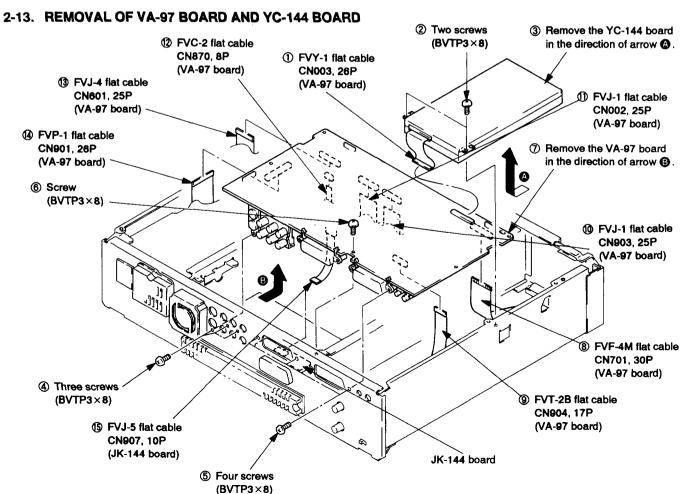
2-11. REMOVAL OF T MOTOR ASSEMBLY



2-9

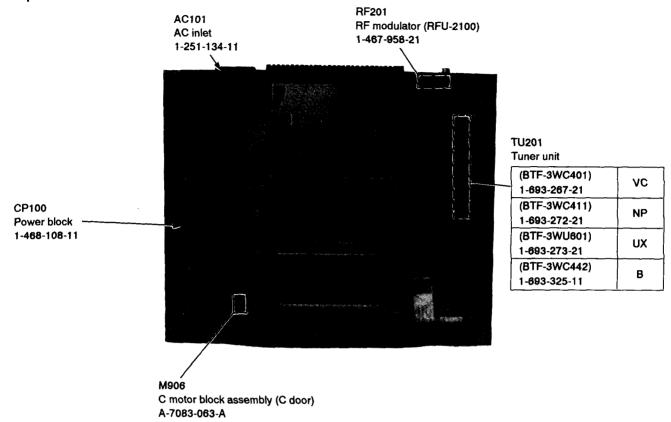
2-12. REMOVAL OF BOTTOM PLATE

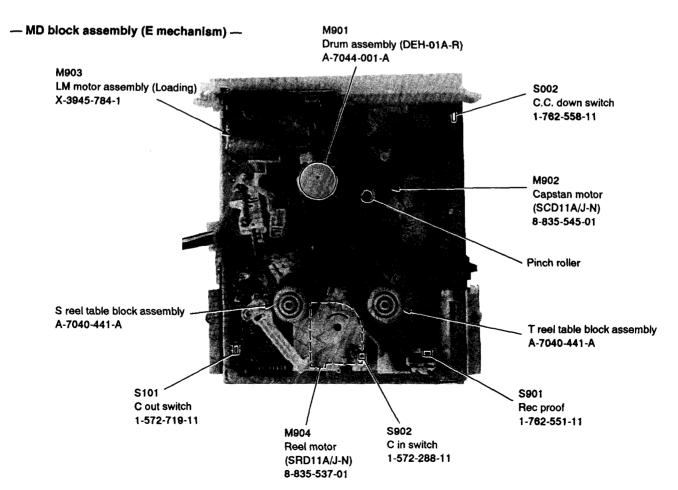


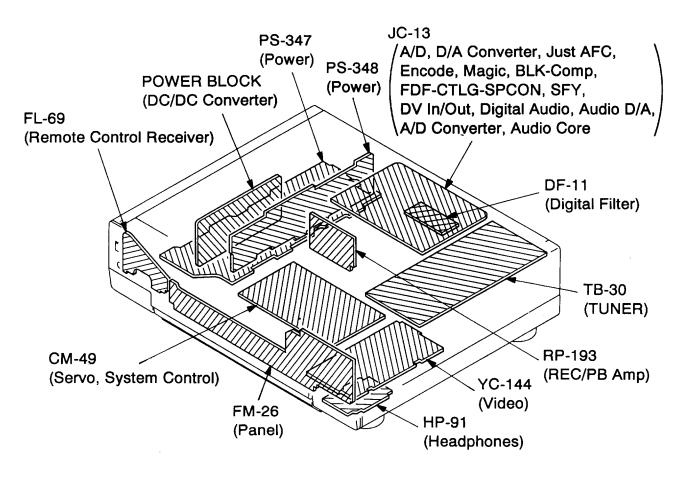


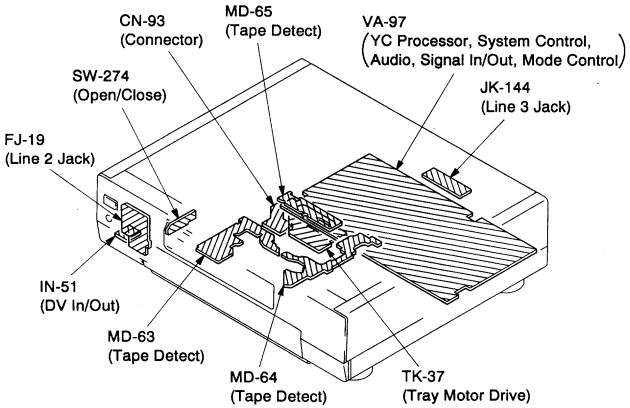
2-14. INTERNAL VIEWS

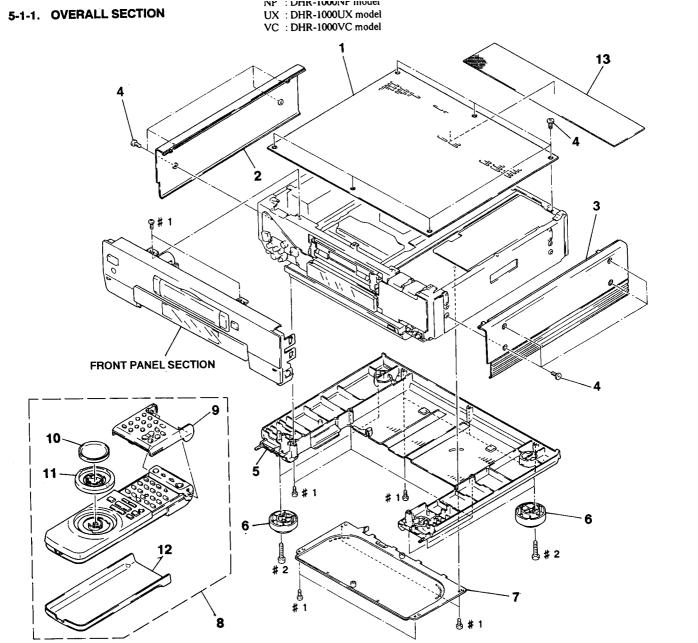
- Top side -



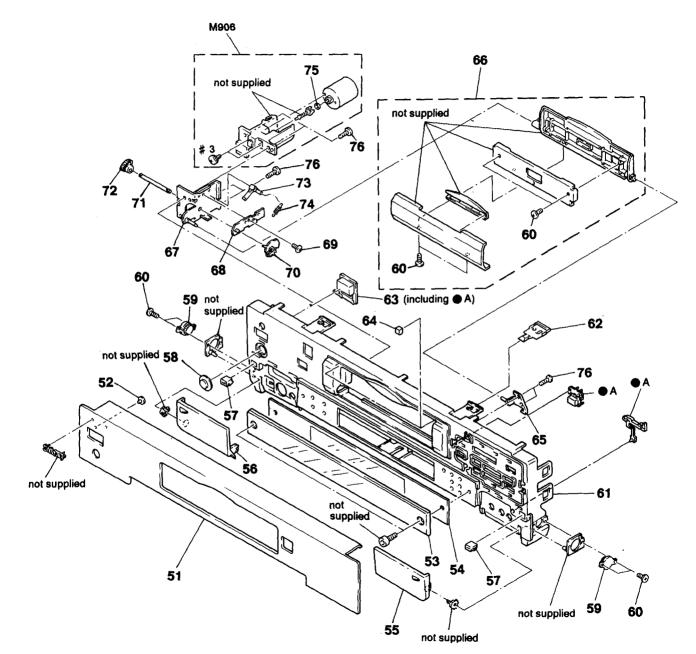


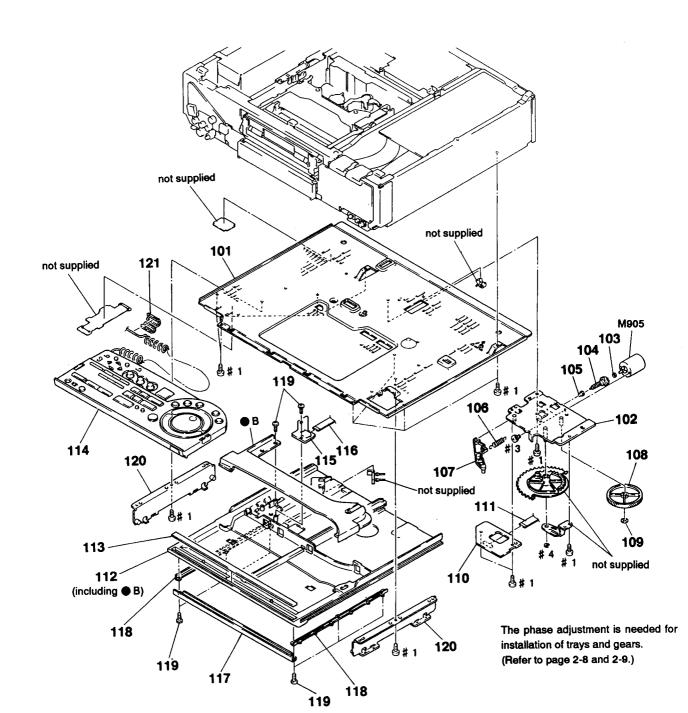


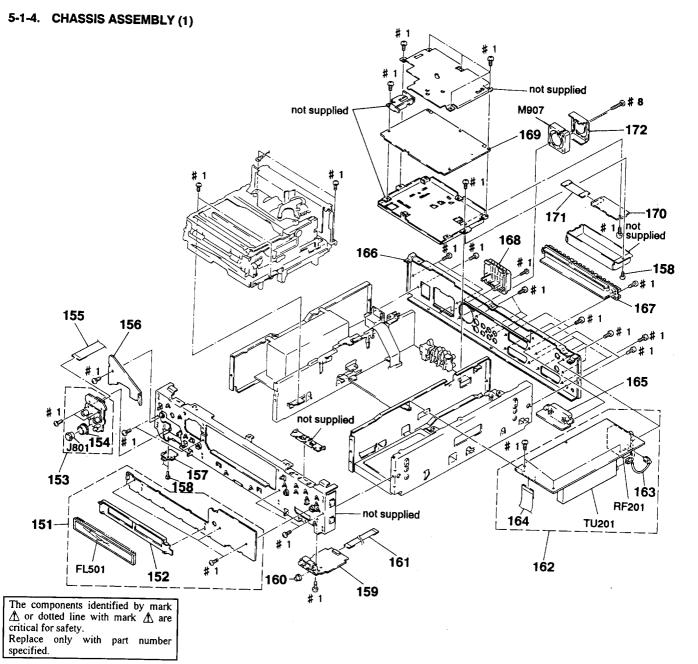




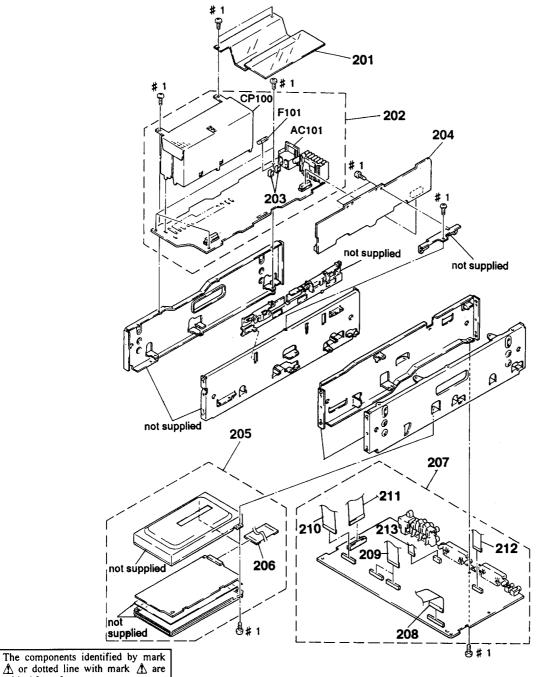
5-1-2. FRONT PANEL SECTION



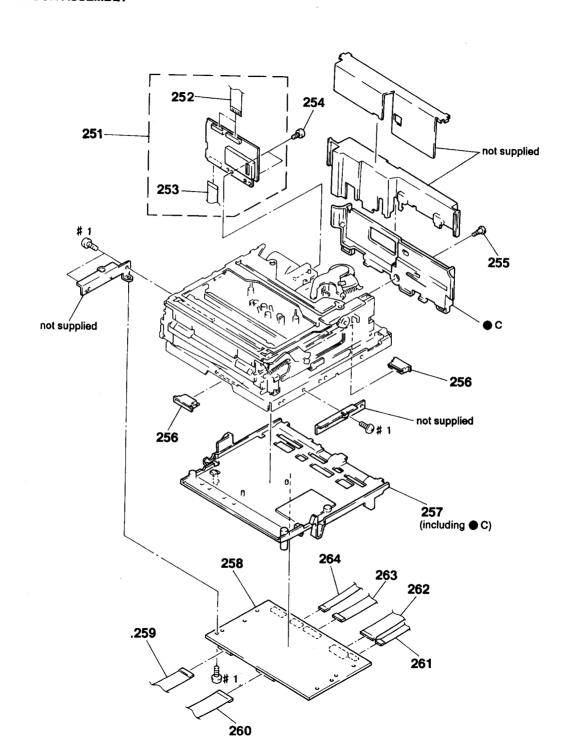




5-1-5. CHASSIS ASSEMBLY (2)

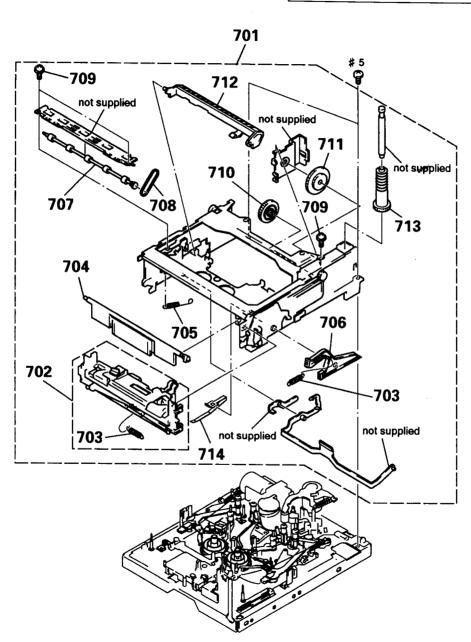


⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



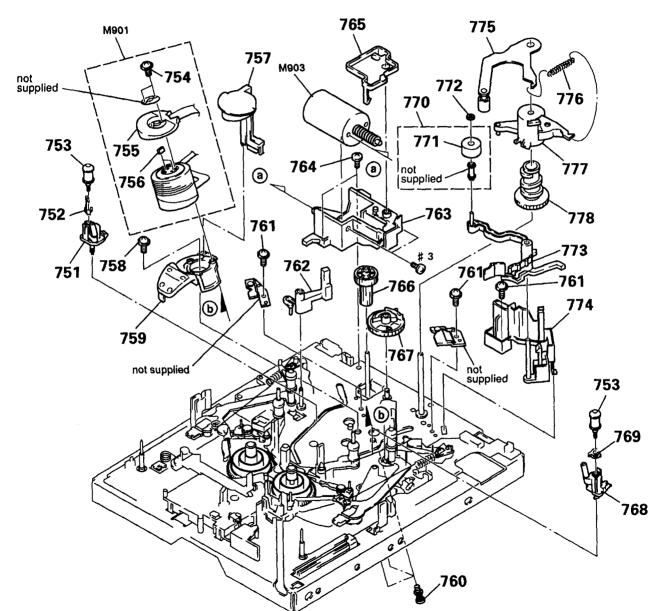
5-1-7. FL CASSETTE COMPARTMENT ASSEMBLY

Be sure to refer to the exploded view (page 57) in the "DV MECHANICAL ADJUSTMENT MANUAL II [E mechanism]", and check the "PHASE ADJUSTMENT", "PLACE FOR GREASE" and "NOT FOR INSTALLATION" etc.



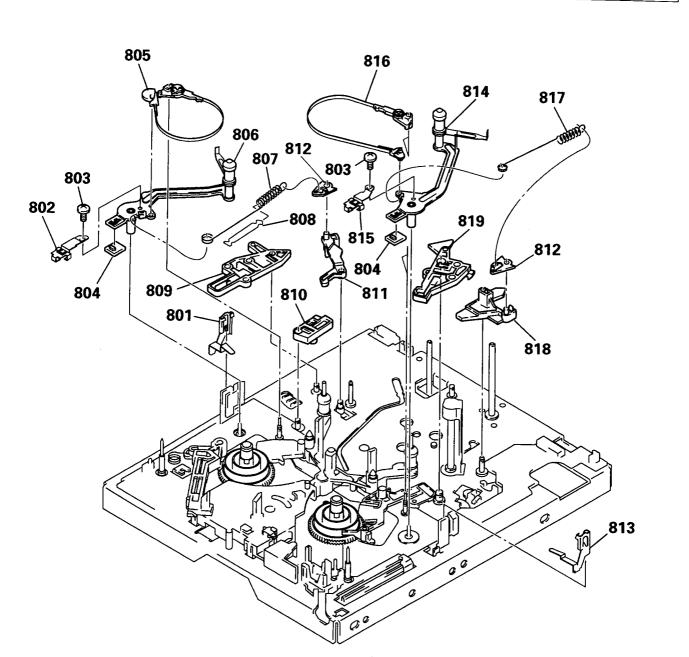
5-1-8. MECHANISM CHASSIS ASSEMBLY (1) (TOP SIDE VIEW (1))

Be sure to refer to the exploded view (page 58) in the "DV MECHANICAL ADJUSTMENT MANUAL II [E mechanism]", and check the "PHASE ADJUSTMENT", "PLACE FOR GREASE" and "NOT FOR INSTALLATION" etc.



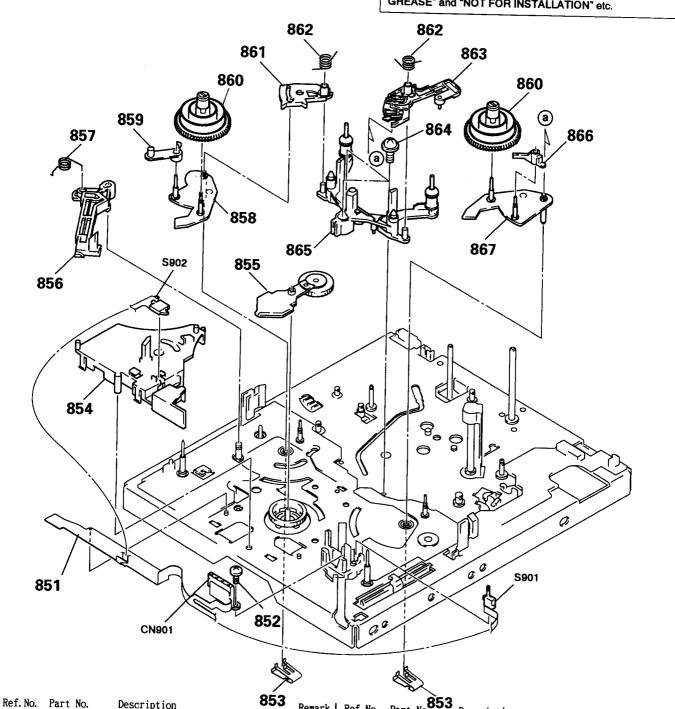
5-1-9. MECHANISM CHASSIS ASSEMBLY (2) (TOP SIDE VIEW (2))

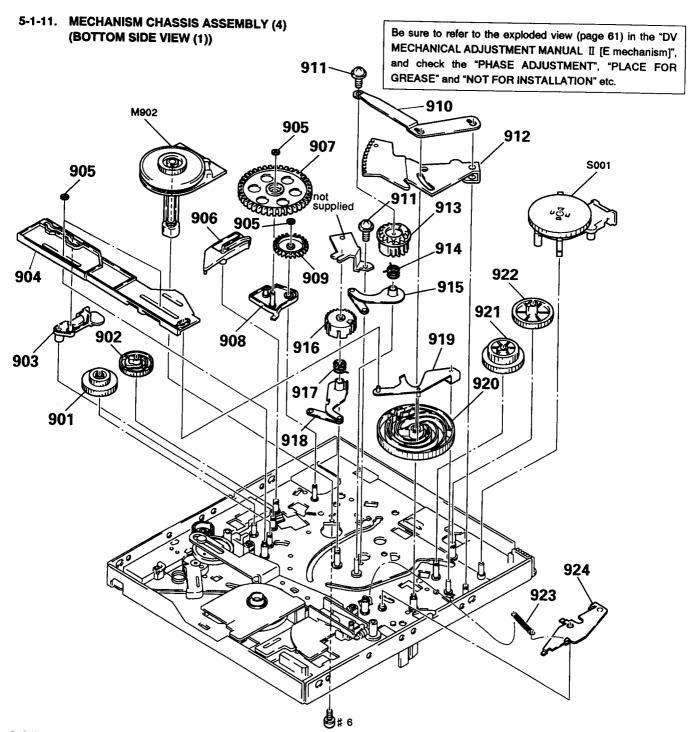
Be sure to refer to the exploded view (page 59) in the "DV MECHANICAL ADJUSTMENT MANUAL II [E mechanism]", and check the "PHASE ADJUSTMENT". "PLACE FOR GREASE" and "NOT FOR INSTALLATION" etc.



5-1-10. MECHANISM CHASSIS ASSEMBLY (3) (TOP SIDE VIEW (3))

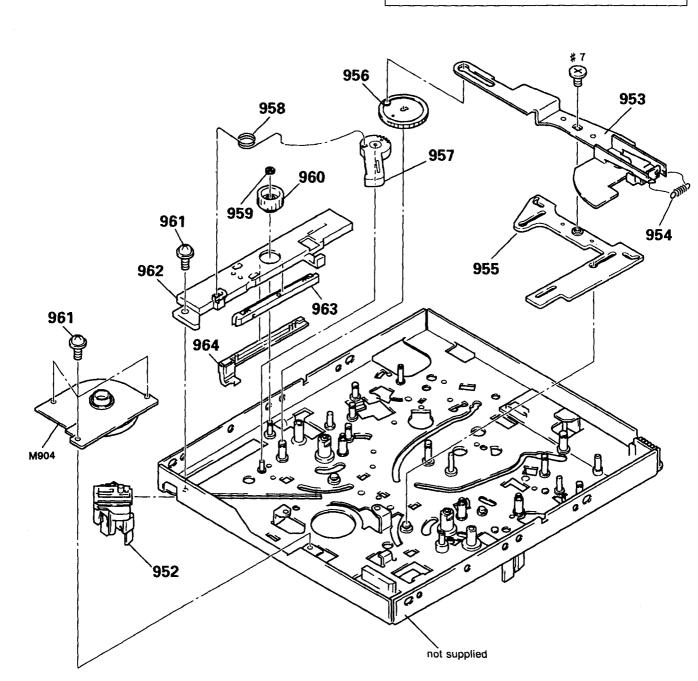
Be sure to refer to the exploded view (page 60) in the "DV MECHANICAL ADJUSTMENT MANUAL II [E mechanism]", and check the "PHASE ADJUSTMENT", "PLACE FOR GREASE" and "NOT FOR INSTALLATION" etc.





5-1-12. MECHANISM CHASSIS ASSEMBLY (5) (BOTTOM SIDE VIEW (2))

Be sure to refer to the exploded view (page 62) in the "DV MECHANICAL ADJUSTMENT MANUAL II [E mechanism]", and check the "PHASE ADJUSTMENT", "PLACE FOR GREASE" and "NOT FOR INSTALLATION" etc.



SECTION 6 ADJUSTMENTS

6-1. MECHANISM SECTION ADJUSTMENTS

Mechanism Section Adjustments

For details of mechanism section adjustments, checks, and replacement of mechanism parts, refer to the separate volume "DV MECHANICAL ADJUSTMENT MANUAL II E Mechanism".

1-1. TAPE PATH ADJUSTMENT

1. Preparations for Adjustment

- 1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
- Connect the adjusting remote commander to the remote terminal.
- Set "LANC MODE" to "S" at the SET UP MENU of the menu screen.
- Turn on the HOLD switch of the adjusting remote commander.
- 5) Select page: 3, address: 3C, and set data: 07.
- 6) Connect the oscilloscope.
 - Channel 1: RP-193 board, CN775 Pin ① (Note 1)
 - External trigger: RP-193 board, CN775 Pin 6
 - Connect the trigger scope and oscilloscope via the multi CPC jig (J-6082-311-A) or CP jig-2 (J-6082-140-A).
- 7) Playback an alignment tape (XH2-1) for tracking.
- 8) Check that the oscilloscope RF waveform is flat at the entrance and exit.
 - If not flat, adjust according to the separate volume "DV MECHANICAL ADJUSTMENT MANUAL II E Mechanism".
- 9) After completing the adjustment, perform "2. Procedure after checking operations".

Note 1: Connect Pins ① and ② (GND) of CN775 with 75Ω termination.

RP-193 Board CN775

Pin No.	Signal Name	Pin No.	Signal Name
1	RF MONTR	2	GND
3	ENV OUT	4	REF OUT
5	LOCK	6	JSWP J
7	SYCS	8	ERRP
9	VP CK CS	10	PLAJP
11	AF REF	12	SCDVCS
13	VA DC CS	14	ENV CONST

2. Procedure after operation

- Connect the adjusting remote commander, and turn on the HOLD switch.
- 2) Select page: 3, address: 3C, and set data: 00.

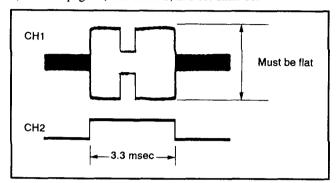


Fig. 6-1-1.

6-2. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts on page 6-32.

2-1. PREPARATIONS BEFORE ADJUSTMENT

2-1-1. Equipment Used

- 1) TV monitor
- 2) Oscilloscope with 2-phenomenon, 30 MHz band, and delay mode (Unless specified otherwise, use a 10:1 probe.)
- 3) Frequency counter
- 4) Digital voltmeter
- 5) Audio generator
- 6) Audio level meter
- 7) Audio distortion meter
- 8) Audio attenuator
- 9) Stabilized power supply
- 10) Alignment tape
 - Tracking reference (XH2-1)
 Parts code:8-967-997-01
 - SW/OL reference (XH2-3)
 Parts code:8-967-997-11
 - Audio operation check (XH5-3P)
 Parts code:8-967-997-55
 - System operations check (XH5-5P) Parts code:8-967-997-66
- 11) Adjusting remote control unit (J-6082-053-B)
- 12) Multi CPC jig (J-6082-311-A) or CP jig 2 (J-6082-140-A)
- 13) Extension board
 - For extension between CN102 of the RP-193 board and CN104 of the JC-13 board.
 - For extension between CN105 of the RP-193 board and CN101 of the JC-13 board. (30P, 0.5 mm) (J-6082-270-A)
 - For extension between CN771 of the RP-193 board and drum (10P, 1 mm) (J-6082-064-A)
 - For extension between CN002 of the CM-49 board and CN870 of the VA-97 board (8P, 1mm) (J-6082-058-A)
 - For extension between CN006 of the CM-49 board and the reel motor (15P, 1.25 mm) (J-6082-354-A)
 - For extension between CN001 of the CM-49 board and CN101 of the MD-63 board (16P, 1mm) (J-6082-020-A)

2-1-2. Connection of Equipment

Input the color bar signal into the LINE4 IN terminal and perform the adjustments. Connect the measuring devices as shown in Fig. 6-2-1 according to the specifications given on which input signal to use (S VIDEO or VIDEO). Input signals are described in () of the signal column. Either signal can be used if no specifications are given. To switch between S VIDEO and VIDEO, select "L4 IN VIDEO" at the menu screen, and switch to "S" (S VIDEO) or "NORM" (VIDEO).

- Note 1: In adjustments specifying for the S VIDEO input to be used, using the VIDEO input would disable the product specifications of this unit from being satisfied. Always use the input signal specified.
- Note 2: If adjustments are used with the VTR with the S video output terminal as the signal source, the performance of this unit may be affected by the VTR. Use a pattern generator with a Y/C separator terminal as much as possible.

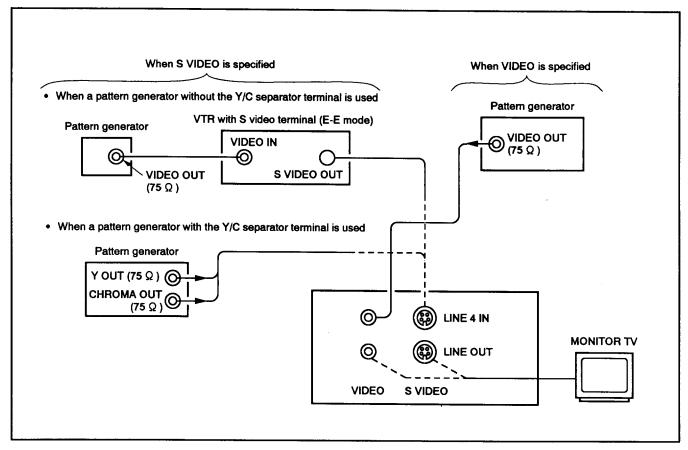


Fig. 6-2-1.

2-1-3. Setting of Switches

Unless specified otherwise, set the switches as follows.

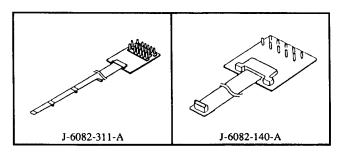
LANC MODE (Menu display)	S
LINE IN AUDIO (Menu display)	16
AUDIO MONITOR (Tray)	
AUDIO MIX BALANCE	Center Click
REC BALANCE	Center Click
REC LEVEL	Center Click
Note: Set LANC MODE and LINE IN	AUDIO at the
"SET UP MENU" of the menu screen	en.

2-1-4. Adjusting Connectors (RP-193 Board CN775)

Some of the adjusting points of the video section are concentrated at CN775 of the RP-193 board. Connect the instruments via the multi CPC jig (J-6082-311-A) or CP jig-2 (J-6082-140-A).

Pin No.	Signal Name	Pin No.	Signal Name
1	RF MONTR	2	GND
3	ENV OUT	4	REF OUT
5	LOCK	6	JSWP J
7	SYCS	8	ERRP
9	VP CK CS	10	PLAJP
11	AF REF	12	SCDVCS
13	VA DC CS	14	ENV CONST

Table. 6-2-1



2-1-5. Checking the Input Signals

Because the video signal obtained from the pattern generator is used as the adjustment signal for adjustments, the video output signal must satisfy the given specifications.

1. S VIDEO Input

Connect the oscilloscope to the Y signal terminal of the S VIDEO input terminal, and check that the sync signal of the Y signal is approximately 0.30V and that the amplitude of the video section is approximately 0.70V. (When a VTR with the S VIDEO output terminal is used, also check that the chroma signal and burst signal have not remained.) Connect the oscilloscope to the chroma signal terminal of the S VIDEO input terminal, and check that the burst signal amplitude of the chroma signal is approximately 0.30V and flat, and that the red signal amplitude of the chroma signal is approximately 0.66V. The Y and chroma signals used in the adjustment are shown in Fig. 6-2-2.

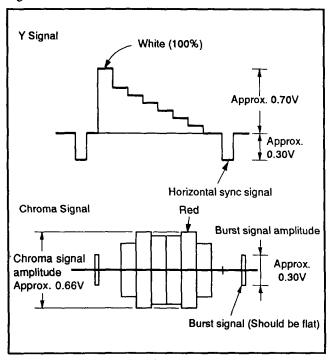


Fig. 6-2-2. Color Bar Signal of Pattern Generator

2. VIDEO input

Connect the oscilloscope to the VIDEO input terminal, and check that the sync signal amplitude of the video signal is approximately 0.30V, the amplitude of the video section is approximately 0.70V, the amplitude of the burst signal is approximately 0.30V and flat, and that the red signal amplitude of the chroma signal is approximately 0.66V.

The video signal (color bar) used for adjustments is shown in Fig. 6-2-3.

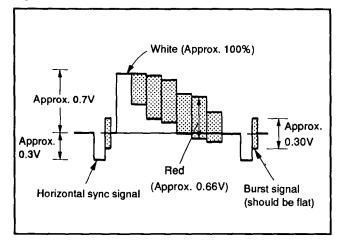


Fig. 6-2-3. Color Bar Signal of Pattern Generator

2-1-6. Alignment Tapes

Use the alignment tapes shown in the following table.
Use tapes specified in the signal column of each adjustment.

Name	Use
Tracking standard (XH2-1)	Tape path adjustment
SW/OL standard (XH2-3)	Switching position adjustment
Audio operation check (XH5-3P)	Audio system adjustment
System operation check (XH5-5P)	Operation check

Table 6-2-2.

Fig. 6-2-4 shows the 75% color bar signals recorded on the alignment tape for Audio Operation Check.

Note: Measure with video output terminal (Terminated at 75 Ω)

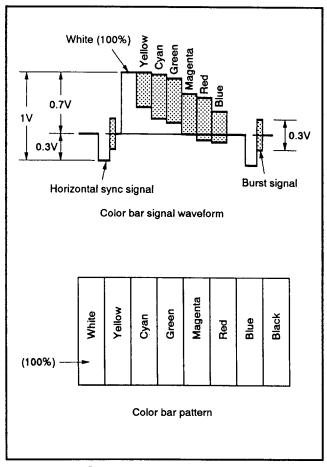


Fig. 6-2-4. Color Bar Signal of Alignment Tapes

2-1-7. Input/Output Level and Impedance

LINE IN 2 and 4

VIDEO IN, pin jack (1 each)

Input signal: 1 Vp-p, 75 Ω , unbalanced, sync negative

AUDIO IN, pin jack (2 each) Input level: 0.5 Vrms

Input impedance: more than 47 $k\Omega$

S1 VIDEO IN, Mini DIN 4-pin connector (1 each)

Y (luminance signal): 1 Vp-p, 75 Ω , unbalanced, sync negative

C (color signal): 0.3 Vp-p, 75 Ω , unbalanced

LINE OUT

VIDEO OUT, pin jack (1 each)

Output signal: 1 Vp-p, 75 Ω , unbalanced, sync negative

AUDIO OUT phono jack (2 each) Standard output: 0.5 Vrms

Load impedance: 47 kΩ

Output impedance: less than 10 k Ω

S1 VIDEO OUT, Mini DIN 4-pin connector (1 each)

Y (luminance signal): 1 Vp-p, 75 Ω , unbalanced, sync negative

C (color signal): 0.3 Vp-p, 75 Ω , unbalanced

2-1-8. Page D Address List

Note 1: The adjustment data initial value is the data input before the video section adjustments (Page D) are performed when the page D data have been lost accidentally.

Note 2: The ← mark shown in the adjustment data memory column indicates that the address data is fixed and is the same as the initial value.

Note 3: UX: DHR-1000UX NP: DHR-1000NP VC: DHR-1000VC B: DHR-1000B

B : DHR-1000B		
I Address		nent Data
	Initial Value	Memory Column
00	00	←
01	00	←
02	25	←
03	40	←
04	00	←
05	0A	-
06	73	-
07	10	-
08	84	-
09	2A	-
0A	6C	←
ОВ	6C	←
0C	27	←
0D	12	←
0E	E7	-
0F	FF	-
10	00	-
11	34	←
	60 (UX)	
12	61 (NP)	
12	62 (VC)	-
	63 (B)	
13	00	-
14	94	-
	71 (UX)	
	77 (NP)	
15	7E (VC)	←
	75 (B)	
16	4D	←
17	2C	—
18	0D	←
19	00	+
1A	11	-

T	Adjustment Data	
Address	Initial Value	Memory Column
1B	19	+
1C	94	-
1D	40	T
1E	00	
1F	01	←
20	65	←
21	43	<u> </u>
22	F8	•
23	3F	-
24	00	←
25	00	
26	00	←
27	11	←
28	19	←
29	00	-
2A	80	
2B	2A	- -
2C	01	-
2D	01	-
2E	02	←
2F		
30		
31	08	←
32	00	←
33	46	-
34	56	-
35	02	←
36	0B	-
37	56	←
38	57	<u>←</u>
39	57	←
3A	54	
3B		
3C		
3D		
3E		
3F		
40		
41		
42		
43		
44		
45		

Table 6-2-3 (2).

Address	Adjustment Data	
Address	Initial Value	Memory Column
46		
47		
48	80	
49	80	
4A	80	
4B		
4C		
4D		
4E		
4F		

Table 6-2-3 (3).

2-2. POWER SUPPLY SYSTEM ADJUSTMENTS

1. Power Supply Voltage Check (PS-348 Board)

Mode	Discharle	
Mode	Playback	
Signal	Any tape	
Measuring Instrument	Digital voltmeter	
J3.1V Check		
Measuring Point	Pin ① of CN006	
Specified Value	$3.1 \pm 0.2 \text{ Vdc}$	
SW 5V Check		
Measuring Point	Pin ③ of CN006	
Specified Value	$5.0 \pm 0.3 \text{ Vdc}$	
SW -5V Check		
Measuring Point	Pin ⑤ of CN006	
Specified Value	$-5.0 \pm 0.3 \text{ Vdc}$	
SW 7V Check		
Measuring Point	Pin 4 of CN005	
Specified Value	$7.0 \pm 0.3 \text{ Vdc}$	
UNSW 6V Check		
Measuring Point	Pin ⑤ of CN005	
Specified Value	$6.0 \pm 0.3 \text{ Vdc}$	
UNSW 14V Check		
Measuring Point	Pin 6 of CN005	
Specified Value	12.7 to 16.0 Vdc	
AUDIO -10V Check		
Measuring Point	Pin 3 of CN007	
Specified Value	-8.5 to -16 Vdc	
AUDIO -6V Check		
Measuring Point	Pin 4 of CN007	
Specified Value	-6.5 to -14 Vdc	
TRAY 14V Check		
Measuring Point	Pin ② of CN007	
Specified Value	12.7 to 16.0 Vdc	
UNSW 5V Check		
Measuring Point	Pin ® of CN007	
Specified Value	5.0 to 0.3 Vdc	
UNSW 9V Check		
Measuring Point	Pin (9) of CN007	
Specified Value	9.0 ± 0.3 Vdc	

2-3. SYSTEM CONTROL SYSTEM ADJUSTMENTS

1. Page D Initial Value Input.

If the page D data has been erased by accident, input the page D initial value first before performing adjustments. For the initial value, refer to "2-1-8. Page D Address".

Mode	E-E
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	00 to 4A

Input method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Select page D and input the initial value to each address. (After setting the data (initial value), before changing the address, be sure to press the PAUSE button of the adjusting remote commander.)
- After inputting all initial values, set data: 00 to page: 1, address: 00.

2. Page C Data Initialization

Mode	E-E
Adjustment Page	С
Adjustment Address	00 to 6F

Initializing method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 01 to page: 4, address: 02, and press the PAUSE button of the remote commander.
- 3) Check that the data of page: 4, address: 02 changes in the order of "01", "03", "05", and "00".
- 4) Set data: 00 to page: 1, address: 00.

3. Timer Clock Adjustment (FM-26 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin 99 of IC501 (CL499)
Measuring Instrument	Frequency counter
Adjusting Element	CT501
Specified Value	$f=2048.01 \pm 0.005 \text{ Hz}$

- 1) Set data: 06 to page: 0, address: FF.
- 2) Set data: 20 to page: 2, address: AD.
- 3) Set the frequency (f) to the specified value using CT501.
- 4) Set data: 00 to page: 2, address: AD.
- 5) Set data: 00 to page: 0, address: FF.

2-4. SERVO SYSTEM ADJUSTMENTS

1. Switching Position Adjustments (RP-193 Board)

1-1. Switching Position Rough Adjustment

Mode	Playback
Signal	SW/OL reference tape
	CH1: Pin ① of CN775
Measurement Point	(RF MONITOR) Note 2
	CH2: Pin 6 of CN775 (JSWP)
	Oscilloscope
Measuring Instrument	TRIG. SOURCE: CH2
Adjustment Page	С
Adjustment Address	4C to 4F
Specified Value	T1=141μ sec, T2=141μ sec

Note 1: Connect a 75 Ω resistor (Parts code: 1-247-804-11) between Pins ① and ② (GND) of CN775.

- 1) Set data: 01 to page: 1, address: 00.
- 2) Write data: 00 to page: C, addresses: 4C to 4F.

 (To write the data, press the PAUSE button of the adjusting remote commander each time data is set.
- 3) Change the data of page: C, address: 4C, and take T1 as the specified value. (Note 3)
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Set data: 00 to page: 1, address: 00.
- 6) Perform the "RF Block Adjustment" of "VIDEO SYSTEM ADJUSTMENT" in advance, "Switching Position Fine Adjustments".
 - Note 2: If not adjusted accurately, "Switching Position Fine Adjustment" cannot be performed. The data displayed is fixed at 7F.
 - Note 3: If T1 does not satisfy the specified value even when the data of address: 4C is changed, change the data of address: 4D.

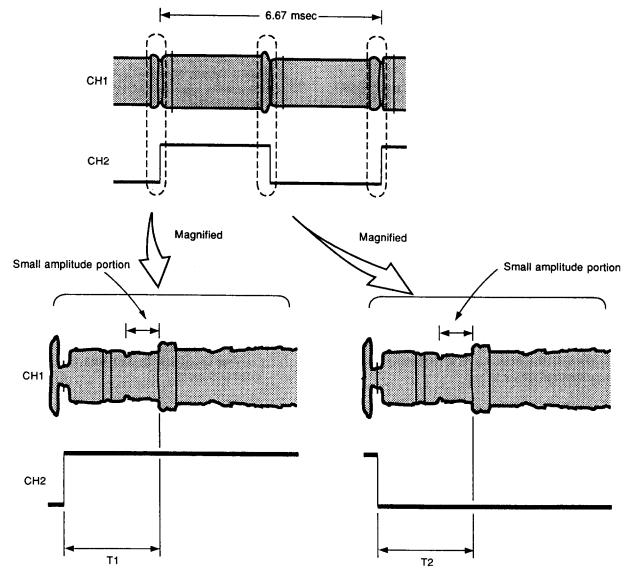


Fig. 6-2-5.

1-2. Switching Position Fine Adjustment

Mode	Playback			
Signal	SW/OL reference tape			
	Page: 3, addresses: 08 and 09			
Massyramout Daint	display data			
Measurement Point	and			
	Oscilloscope			
	CH1: Pin ① of CN775 (RF			
.	MONITOR) Note 2			
Measuring Instrument	CH2: Pin 6 of CN775 (JSWP)			
	TRIG, SOURCE: CH2			
Adjustment Page	С			
Adjustment Address	4C, 4E			
	The numbers "F8" to "FF" and "00"			
G., 16, 137.1	to "08" are displayed alternately and			
Specified Value	consistently at page: 3, addresses: 08			
	and 09.			

Note 1: Referm the "RP-193 Board Adjustment" of "VIDEO SYSTEM ADJUSTMENT" in advance.

Adjusting method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 03 to page: 3, address: 00, and press the PAUSE button of the adjusting remote commander.
- Read the average value D08 of the data displayed for page:
 address: 08, and calculate as follows using this value.
 [If D08 is "80" to "FF"]

Obtain the revised value from the following equation, and deduct it from the data of page: C, address: 4C. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)

Revised value=FF-D08 (Hexadecimal calculation. Refer to the following table.)

[If Dos is "00" to "7E"]

Add D08 to the data of page: C, address: 4C. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)

[If Dos is "7F"]

It indicates that "Switching Position Rough Adjustment" is not completed. Repeat from step 3) of "Switching Position Rough Adjustment". (Note 5) 4) Read the displayed data of page: 3, address: 08, and check that the numbers "F8" to "FF" and "00" to "08" are displayed alternately and consistently at page: 3, address: 08.

If the data changes rapidly and the lower digits cannot be read, check that "0" and "F" are displayed alternately and consistently at the upper digit of the data displayed. If they are not, repeat from step 3) of "Switching Position Rough Adjustment".

- 5) Connect the oscilloscope to the measuring point.
- Change the data of page: C, address: 4E, and set T2 as 141μ sec.
- Press the PAUSE button of the adjusting remote commander.
- 8) Read the average value D09 of the displayed data of page:3, address: 09, and calculate as follows using this value.[If D09 is "80" to "FF"]

Obtain the revised value from the following equation, and deduct it from the data of page: C, address: 4E. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)

Revised value=FF-D09 (Hexadecimal calculation. Refer to the following table.)

[If Do9 is "00" to "7E"]

Add D09 to the data of page: C, address: 4E. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)

[If D09 is "7F"]

It indicates that the adjustment of step 6) has not been performed properly. Repeat from step 5).

9) Read the displayed data of page: 3, address: 09, and check that the numbers "F8" to "FF" and "00" to "08" are displayed alternately and consistently.

If the data changes rapidly and the lower digits cannot be read, check that "0" and "F" are displayed alternately and consistently at the upper digit of the data displayed. If they are not, repeat from step 5).

- 10) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 11) Set data: 00 to page: 1, address: 00.

Note 5: If the displayed data is "7F" no matter how many times the adjustment is performed, it indicates that IC774 is faulty.

D08 or D09	FE	FD	FC	FB	FA	F9	F8	F 7	F6	F5	F4	F3	F2	F1	F0
Revised Value (Hexadecimal)	1	2	3	4	5	6	7	8	9	A	В	С	D	E	F

2-5. VIDEO SYSTEM ADJUSTMENTS

2-5-1. RP-193 Board Adjustments

1. Recording Current Adjustment (RP-193 Board)

Mode	E-E			
Signal	Arbitrary			
	ODDch adjustment			
	CH1: Pin 6 of CN771 (CL816)			
Measurement Point	CH2: Pin ⑤ of CN771 (CL815)			
	EVENch adjustment			
	CH1: Pin ③ of CN771 (CL813)			
	CH2: Pin ② of CN771 (CL812)			
	Oscilloscope			
Measuring Instrument	ADD mode			
	CH2 INV mode			
Adjustment Page	C.			
Adjustment Address	3E, 3F			
Specified Value	$A=4.0 \pm 0.1 \text{ Vp-p}$			

Connection: Disconnect CN771 and connect as follows.

- ODDch adjustment: Connect a 180 Ω resistor between Pin
 of CN771 (CL816) and Pin
 of CN771 (CL815).
- 2) EVENch adjustment: Connect a 180 Ω resistor between Pin ③ of CN771 (CL813) and Pin ② of CN771 (CL812). 180 Ω resistor (Parts code: 1-249-408-11)

Adjusting method:

- 1) Equalize the vertical range of CH1 and CH2 of the oscilloscope.
- 2) Set the oscilloscope to the ADD mode, and set CH2 to the INV mode.
- 3) Set data: 01 to page: 1, address: 00.
- 4) Set data: 0C to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 5) Set data: 85 to page: 3, address: 34.
- 6) Change the data of page: C, address: 3F (ODDch adjustment) or address: 3E (EVENch adjustment), and adjust the signal voltage (A) to the specified value, press the PAUSE button on the adjustment remote commander.
- 7) Set data: 80 to page: 3, address: 34.
- 8) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 9) Set data: 00 to page: 1, address: 00.

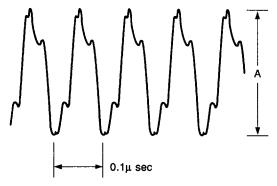


Fig. 6-2-6.

2. PLL fo Adjustment (RP-193 Board)

Mode	E–E
Signal	Arbitrary
Measurement Point	Displayed data of page: 3,
Measuring Instrument	address: 04
Adjustment Page	С
Adjustment Address	3D, 3C
Specified Value	Displayed data is "FD" to "FF", "00" to "03"
	("FF", "00" are center values)

Adjusting method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 05 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 0E to page: 3, address: 36.
- 4) Check that the average value D04 of the displayed data of page: 3, address: 04 is "FD" to "FF", "00" or "03". If outside this range, change the data of page: C, address: 3C, and check again.

[If D04 is "80" to "FC"]

Decrease the data of page: C, address: 3C. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)

[If Do4 is "04" to "7F"]

Increase the data of page: C, address: 3C. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)

- 5) Set data: 0F to page: 3, address: 36.
- 6) Check that the average value D04 of the displayed data of page: 3, address: 04 is "FD" to "FF" or "00" to "03". If outside this range, change the data of page: C, address: 3D, and check again.

[If D04 is "80" to "FC"]

Decrease the data of page: C, address: 3D. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)

[If Do4 is "04" to "7F"]

Increase the data of page: C, address: 3D. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)

- 7) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 8) Set data: 04 to page: 3, address: 36.
- 9) Set data: 00 to page: 1, address: 00.

3 AGC Center Level Adjustment (RP-193 Board)

Mode	Recording/playback
Signal	Color bar
Measurement Point	CH1: Pin ® of CN775 (ERRP)
Measurement Four	CH2: Pin 6 of CN775 (JSWP)
Measuring Instrument	Oscilloscope
Weasuring instrument	Trigger source: CH2
Adjustment Page	С
Adjustment Address	44

Adjusting method:

- 1) Record color bar signal for two minutes on any tape.
- 2) Set data: 01 to page: 1, address: 00.
- 3) Write the following data in page: C, addresses: 40 to 44, 4B, 5A.

To write the data, press the PAUSE button of the adjusting remote commander each time data is set.

Page: C, address: 40, data: D0

Page: C, address: 41, data: D0

Page: C, address: 42, data: 90

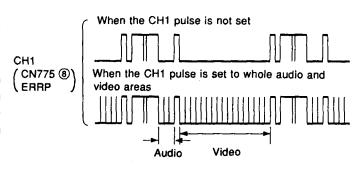
Page: C, address: 43, data: 90

Page: C, address: 44, data: 86

Page: C, address: 4B, data: 8E

Page: C, address: 5A, data: 00

- 4) Playback the part recorded with the color bar signal.
- 5) Increase the data of page: C, address: 44, read the data D1 when the CH1 pulse is set to the whole audio and video areas.
- 6) Decrease the data of page: C, address: 44, and read the data D2 when the CH1 pulse is set to the whole audio and video areas.
- 7) Obtain the average value of D1 and D2, and take it as D3.
- 8) Set D3 to page: C, address: 44, and press the PAUSE button of the adjusting remote commander.
- Set data: 0E to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 10) Set data: 84 to page: C, address: 5A, and press the PAUSE button of the adjusting remote commander.
- 11) Set data: 00 to page: 1, address: 00.
- 12) After completing the adjusting, perform 5. AEQ Adjustment.





[Actual Waveform]

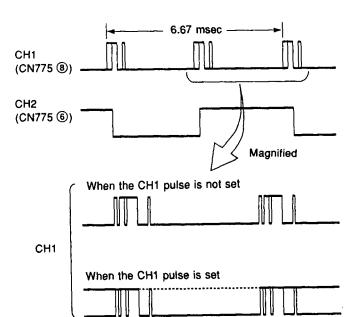


Fig. 6-2-7.

4. CLK DELAY Adjustment (RP-193 Board)

Mode	Recording/playback
Signal	Color bar
Measurement Point	CH1: Pin ® of CN775 (ERRP)
	CH2: Pin 6 of CN775 (JSWP)
Measuring Instrument	Oscilloscope
wicasaring mstrument	Trigger source: CH2
Adjustment Page	С
Adjustment Address	47

Adjusting method:

- 1) Record color bar signal for two minutes on any tape.
- 2) Set data: 01 to page: 1, address: 00.
- Write the following data in page: C, addresses: 40 to 43, 47, 4B, 5A.

(To write the data, press the PAUSE button of the adjusting remote commander each time data is set.

Page: C, address: 40, data: D0

Page: C, address: 41, data: D0

Page: C, address: 42, data: 90

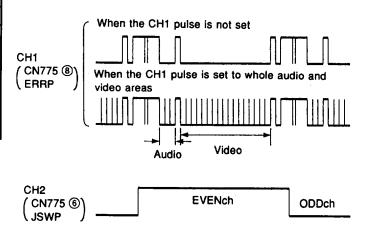
Page: C, address: 43, data: 90

Page: C, address: 47, data: C8

Page: C, address: 4B, data: 8E

Page: C, address: 5A, data: 00

- 4) Playback the part recorded with the color bar.
- Increase the data of page: C, address: 47, read the data D1
 when the CH1 pulse is set to the whole audio and video
 areas.
- 6) Decrease the data of page: C, address: 47, and read the data D2 when the CH1 pulse is set to the whole audio and video areas.
- 7) Obtain the average value of D1 and D2, and take it as D3.
- 8) Set D3 to page: C, address: 47, and press the PAUSE button of the adjusting remote commander.
- 9) Set data: 0E to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 10) Set data: 84 to page: C, address: 5A, and press the PAUSE button of the adjusting remote commander.
- 11) Set data: 00 to page: 1, address: 00.
- After completing the adjusting, perform "5. AEQ Adjustment".



[Actual Waveform]

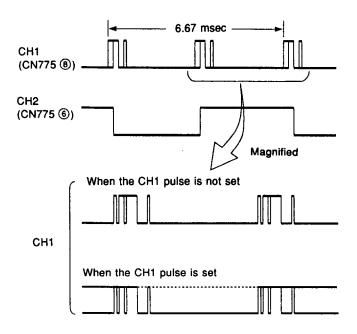


Fig. 6-2-8.

5. AEQ Adjustment (RP-193 Board)

Mode	Recording/playback
Signal	Arbitrary
Measurement Point	Pin ① of CN775 (RF MONITOR)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	40, 41, 42, 43, 5A

Note: Avoiding the tape top and end, use the stabilized part of the RF output at the tape center.

Adjusting method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 8E to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 3) Write data in page: C, addresses: 40 to 43, and 5A as shown in the following table.

(To write the data, press the PAUSE button of the adjusting remote commander each time data is set.

Address	Data
40	C0
41	C0
42	90
43	90
5A	00

- 4) Record color bar signal for one minute from the tape top.
- 5) Check that the data of page: 3, address: 3A is "06" (ME tape mode).
- 6) Rewind the tape, and play back the part recorded.
- 7) When the RF output stabilizes, set data: 07 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 8) About 20 to 30 seconds after pressing the PAUSE button, check that the data of address: C2 changes from "07" to "00".
- 9) Check that the data of page: 3, address: 03 is the following value.

When "00": Normal

When "01": EVENch is faulty When "02": ODDch is faulty

When "03": EVENch and ODDch are faulty

Perform the following procedure only when "00" is displayed.

10) Read the data of page: 3, address: 04 to 07, and take the values as D04, D05, D06, and D07.

- 11) Set D04 to page: D, address: 40, and press the PAUSE button of the adjusting remote commander.
- 12) Set D05 to page: D, address: 42, and press the PAUSE button of the adjusting remote commander.
- 13) Set Do6 to page: D, address: 41, and press the PAUSE button of the adjusting remote commander.
- 14) Set D07 to page: D, address: 43, and press the PAUSE button of the adjusting remote commander.
- 15) Set data: 84 to page: C, address: 5A, and press the PAUSE button of the adjusting remote commander.
- 16) Set data: 0E to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 17) Set data: 00 to page: 1, address: 00.

6. PLL Capture Range Adjustment (RP-193 Board)

Mode	Recording/playback
Signal	Color bar
Marana Paine	CH1: Pin ® of CN775 (ERRP)
Measurement Point	CH2: Pin ⑥ of CN775 (JSWP)
	Oscilloscope
Measuring Instrument	Trigger source: CH2
Adjustment Page	С
Adjustment Address	46

Adjusting method:

- 1) Record color bar signal for two minutes on any tape.
- 2) Set data: 01 to page: 1, address: 00.
- 3) Write the following data in page: C, addresses: 4B and 5A.

 (To write the data, press the PAUSE button of the adjusting remote commander each time data is set.

Page: C, address: 4B, data: 8E

Page: C, address: 5A, data: 00

- 4) Playback the part recorded with the color bar signal.
- 5) Set data: 80 to page: C, address: 46, and press the PAUSE button of the adjusting remote commander.
- 6) Set the data of page: C, address: 46 to "60", and check that the pulse is not set at the audio area head of the ERRP waveform's ODDch of the oscilloscope (CH1).
- Set the data of page: C, address: 46 to "A0", and check that the pulse is not set at the audio area head of the ERRP waveform's ODDch of the oscilloscope (CH1).

After confirming steps 6) and 7), proceed to step 12).

- 8) If the pulse is set in steps 6) and 7), increase the data of page: C, address: 46 from "80", and read the data D1 when the pulse is set at the audio area head of CH1.
- Decrease the data of page: C, address: 46 from "80", and read the data D2 when the pulse is set at the audio area head of CH1.
- 10) Obtain the average value of D1 and D2, and take it as D3.
- 11) Set D3 to page: C, address: 46, and press the PAUSE button of the adjusting remote commander.
- 12) Set data: 0E to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 13) Set data: 84 to page: C, address: 5A, and press the PAUSE button of the adjusting remote commander.
- 14) Set data: 00 to page: 1, address: 00.

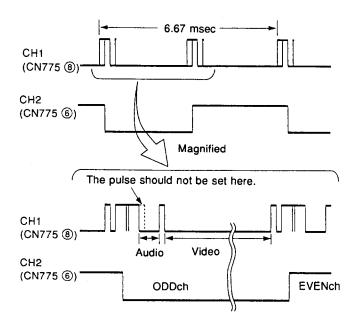


Fig. 6-2-9.

2-5-2. JC-13 Board Adjustments

1. A/D Converter Reference Voltage Adjustment 1 (JC-13 Board)

Mode	E-E		
Signal	Arbitrary		
Measurement Point	Pin ⑤ of IC013 (CL061)		
Measuring Instrument	Digital voltmeter		
Adjusting Element	RV001		
Specified Value	A=2.83 ± 0.01 Vdc		

Adjusting method:

1) Set the VRT voltage (A) to the specified value using RV001.

2. A/D Converter Reference Voltage Adjustment 2 (JC-13 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ③ of IC013 (CL062)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV002
Specified Value	$A=0.96 \pm 0.01 \text{ Vdc}$

Adjusting method:

 Set the VRB voltage (A) to the specified value using RV002.

3. Y Signal Clamp Reference Voltage Adjustment (JC-13 Board)

Mode	E–E
Signal	Color bar
Measurement Point	Pin ® of IC011 (CL054)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV011
Specified Value	A=1.150 ± 0.005 Vdc

Connection: Connect a jumper wire between Pin 6 of IC018 (CL150) and GND.

Adjusting method:

1) Set the Y signal clamp reference voltage (A) to the specified value using RV011.

4. CR Signal Clamp Reference Voltage Adjustment (JC-13 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ® of IC010 (CL052)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV010
Specified Value	A=1.900 ± 0.005 Vdc

Connection: Connect a jumper wire between Pin 6 of IC018 (CL150) and GND.

Adjusting method:

 Set the CR signal clamp reference voltage (A) to the specified value using RV010.

5. CB Signal Clamp Reference Voltage Adjustment (JC-13 Board)

Mode	E–E
Signal	Color bar
Measurement Point	Pin ® of IC009 (CL053)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV012
Specified Value	A=1.900 ± 0.005 Vdc

Connection: Connect a jumper wire between Pin 6 of IC018 (CL150) and GND.

Adjusting method:

1) Set the CB signal clamp reference voltage (A) to the specified value using RV012.

6. Playback Y Signal Level Adjustment (JC-13 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ® of CN102 (CL113)
Measuring Instrument	Oscilloscope
Adjusting Element	RV301
Specified Value	$A=0.43 \pm 0.01 \text{ V}$

Adjusting method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 15 to page: D, address: 02, and press the PAUSE button of the adjusting remote commander.
- Set data: 04 to page:D, address: 04, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 09 to page: 5, address: 02.
- Set the Y signal level (A) to the specified value using RV301.
- 6) Set data: 00 to page: 5, address: 02.
- Set data: 25 to page: D, address: 02, and press the PAUSE button of the adjusting remote commander.
- 8) Set data: 00 to page: D, address: 04, and press the PAUSE button of the adjusting remote commander.
- 9) Set data: 00 to page: 1, address: 00.

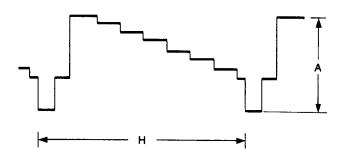


Fig. 6-2-10.

Playback CR Signal Level Adjustment (Encoder R-Y Input Level Temporary Adjustment) (JC-13 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin 10 of CN102 (CL114)
Measuring Instrument	
Adjusting Element	RV004
Specified Value	A=540 ± 10 mV

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 15 to page: D, address: 02, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 04 to page: D, address: 04, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 09 to page: 5, address: 02.
- 5) Set the CR signal level (A) to the specified value using RV004.
- 6) Set data: 00 to page: 5, address: 02.
- 7) Set data: 25 to page: D, address: 02, and press the PAUSE button of the adjusting remote commander.
- 8) Set data: 00 to page: D, address: 04, and press the PAUSE button of the adjusting remote commander.
- 9) Set data: 00 to page: 1, address: 00.
- 10) After the adjustment, be sure to perform general adjustment "Encoder R-Y Input Level Adjustment".

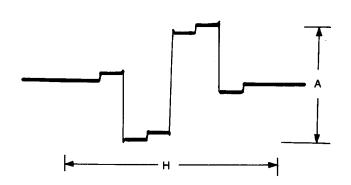


Fig. 6-2-11.

8. Playback CB Signal Level Adjustment (JC-13 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin 1 of CN102 (CL115)
Measuring Instrument	Oscilloscope
Adjusting Element	RV005
Specified Value	A=390 ± 10 mV

Adjusting method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 15 to page: D, address: 02, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 04 to page: D, address: 04, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 09 to page: 5, address: 02.
- 5) Set the CB signal level (A) to the specified value using RV005.
- 6) Set data: 00 to page: 5, address: 02.
- 7) Set data: 25 to page: D, address: 02, and press the PAUSE button of the adjusting remote commander.
- 8) Set data: 00 to page: D, address: 04, and press the PAUSE button of the adjusting remote commander.
- 9) Set data: 00 to page: 1, address: 00.

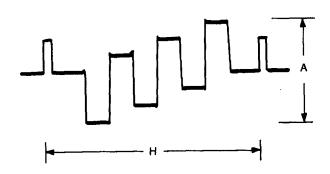


Fig. 6-2-12.

9. CTLG SPCK Adjustment (JC-13 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	Pin 7 of IC202 (CL219)
Measuring Instrument	Frequency counter
Adjusting Element	CT401
Specified Value	f=13.5 MHz ± 100 Hz

Adjusting method:

1) Set the CTLG SPCK frequency (f) to the specified value using CT401.

10. AFC Preliminary Adjustment (JC-13 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Pin (9) of 1C205 (CL214)
Measuring Instrument	Digital voltmeter
Adjusting Element	CT200
Specified Value	A=1.9 ± 0.5 Vdc

Adjusting method:

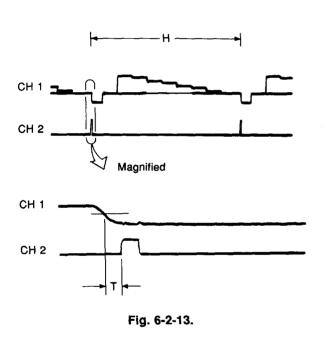
1) Set the DC voltage (A) to the specified value using CT200.

11. AFC Picture Frame Adjustment (JC-13 Board)

Mode	Recording
Signal	Color bar
Measurement Point	CH1: Pin ② of IC017 (CL051)
	CH2: Pin ⁽³⁾ of IC205 (CL222)
Measuring Instrument	Oscilloscope
Adjusting Element	RV200
Specified Value	T=110 ± 10 nsec

Adjusting method:

1) Set the time difference (T) between the H SYNC falling and AFH rising to the specified value using RV200.



12. AFC Adjustment (JC-13 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Pin 9 of IC205 (CL214)
Measuring Instrument	Digital voltmeter
Adjusting Element	CT200
Specified Value	$A=1.90 \pm 0.05 \text{ Vdc}$

Adjusting method:

1) Set the DC voltage (A) to the specified value using CT200.

2-5-3. YC-144 Board Adjustments

1. Y/C Separation Input Level Check (YC-144 Board)

Mode	E-E
Signal	Color bar (VIDEO input)
Measurement Point	Pin 7 of CN001 (CL207)
Measuring Instrument	BW LIMIT: 20 MHz
Specified Value	$A=1.00 \pm 0.01 \text{ V}$
	B=0.3 V
	C=300 mVp-p
	D=660 mVp-p

Note 1 : Set to the following at the SET UP menu of the menu screen

L4 IN VIDEONORM

- 1) Check that the VIDEO signal level (A) is the specified value.
- 2) Check that the SYNC signal level (B) is the specified value
- 3) Check that the burst signal level (C) is the specified value.
- 4) Check that the red chroma signal level (D) is the specified value.

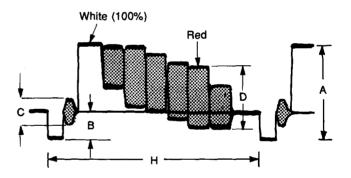


Fig. 6-2-14.

2. Y/C Separation Y Level Adjustment (YC-144 Board)

Mode	E-E
Signal	Color bar (VIDEO input)
Measurement Point	Pin ⑦ of IC209 (CL017)
Measuring Instrument	Oscilloscope
Adjusting Element	RV201
Specified Value	A=1.00 ± 0.01 V

Note 1 : Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEONORM

Adjusting method:

1) Set the Y signal level (A) to the specified value using RV201.

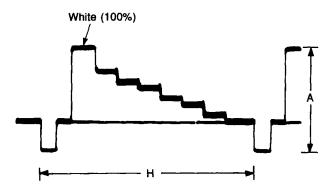


Fig. 6-2-15.

3. Y/C Separation Chroma Level Check (YC-144 Board)

Mode	E-E
Signal	Color bar (VIDEO input)
Measurement Point	Pin ⑦ of IC210 (CL014)
Measuring Instrument	Oscilloscope
Specified Value	A=150 ± 10 mV

Note 1 : Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEONORM

Adjusting method:

1) Check that the burst signal level (A) is the specified value.

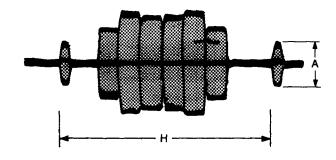


Fig. 6-2-16.

2-5-4. Transcoder Adjustment (DHR-1000B only)

1. BELL Filter Adjustment (YC-144 Board)

Mode	E-E
Signal	SECAM Color bar
Measurement Point	Pin ② of IC003 (CL022)
Measuring Instrument	Oscilloscope
Adjusting Element	LV001
Specified Value	$A=0 \pm 20 \text{ mV}$

Note 1 : Set to the following at the SET UP menu of the menu screen.

AUTO COLORAUTO

Adjusting method:

1) Flatten the chroma signal envelope using LV001.

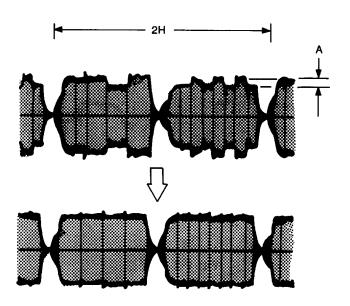


Fig. 6-2-17.

2. VCO Adjustment (YC-144 Board)

Mode	E–E
Signal	SECAM Color bar (VIDEO input)
Measurement Point	Pin (9) of IC003 (CL026)
Measuring Instrument	Frequency counter
Adjusting Element	RV001
Specified Value	$f=15.625 \pm 0.01 \text{ kHz}$

Note 1 : Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEO	NORM
AUTO COLOR	AUTO

Connection: Connect a jumper wire between Pin ® and Pin 9 of IC003.

Adjusting method:

1) Set the frequency (f) to the specified value using RV001.

3. I REF Adjustment (YC-144 Board)

Mode	E–E
Signal	SECAM Color bar
Measurement Point	CH1: Pin ⑦ of CN001
	CH2: Pin (9) of IC003 (CL026)
Measuring Instrument	Oscilloscope
Adjusting Element	RV002
Specified Value	$T=4.5 \pm 0.1 \mu sec$

Note 1 : Set to the following at the SET UP menu of the menu screen.

AUTO COLORAUTO

Adjusting method:

1) Set the time difference between the CH1 waveform and CH2 waveform to the specified value using RV002.

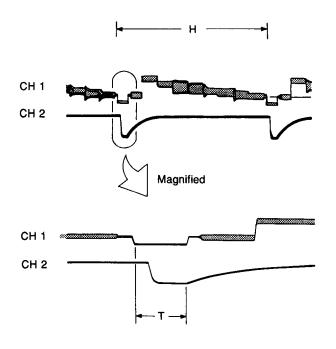


Fig. 6-2-18.

4. B-Y fo Adjustment (YC-144 Board)

Mode	E–E
Signal	SECAM Color bar
Measurement Point	Pin ③ of IC004 (CL032)
Measuring Instrument	Oscilloscope
Adjusting Element	LV003
Specified Value	A=0 ± 0.05 V

Note 1 : Set to the following at the SET UP menu of the menu screen

AUTO COLORAUTO

Connection: Connect a jumper wire between Pin (9) and Pin (2) of IC003.

Adjusting method:

1) Minimize the level difference (A) using LV003.



Fig. 6-2-19.

5. R-Y fo Adjustment (YC-144 Board)

Mode	E–E
Signal	SECAM Color bar
Measurement Point	Pin ② of IC004 (CL033)
Measuring Instrument	Oscilloscope
Adjusting Element	LV002
Specified Value	A=0 ± 0.05 V

Note 1 : Set to the following at the SET UP menu of the menu screen.

AUTO COLORAUTO

Connection: Connect a jumper wire between Pin (9) and Pin (2) of IC003.

Adjusting method:

- 1) Minimize the level difference (A) using LV002.
- 2) Perform "B-Y fo Adjustment" again.

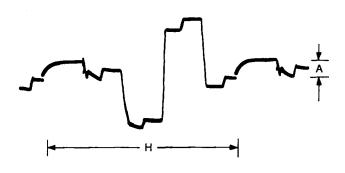


Fig. 6-2-20.

6. Color Difference Signal Output Level Adjustment (YC-144 Board)

Mode	E–E
Signal	SECAM Color bar
Measurement Point	Pin ③ of IC004 (CL032)
Measuring Instrument	Oscilloscope
Adjusting Element	RV003
Specified Value	A=750 ± 50 mV

Note 1: Set to the following at the SET UP menu of the menu screen.

AUTO COLORAUTO

Connection: Connect a jumper wire between Pin (9) and Pin (2) of IC003.

Adjusting method:

 Set the B-Y signal level (A) to the specified value using RV003.

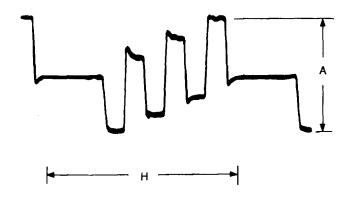


Fig. 6-2-21.

2-5-5. VA-97 Board Adjustment

1. AGC Adjustment (VA-97 Board)

Mode	E-E
Signal	Color bar (S VIDEO input)
Measurement Point	Pin ① of IC003 (CL043)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	48
Specified Value	A=0.50 ± 0.01 V

Note 1 : Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEOS

Adjusting method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Change the data of page:D, address: 48, and adjust the Y signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote control
- 4) Set data: 00 to page: 1, address: 00.

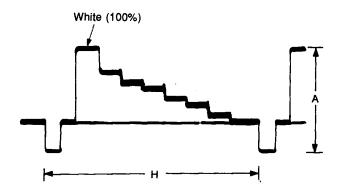


Fig. 6-2-22.

2. Analog E-E Y Signal Output Level Adjustment (VA-97 Board)

Mode	E-E
Signal	Color bar (S VIDEO input)
Measurement Point	Y signal terminal of S video output terminal (CL159)
Measuring Instrument	Oscilloscope
Adjusting Element -	RV014
Specified Value	A=1.00 ± 0.01 V

Note 1: Terminate the Y signal terminal of the S video output terminal using a 75Ω resistor.

75 Ω resistor (Parts code: 1-247-804-11)

Note 2: Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEOS

Adjusting method:

 Set the Y signal level (A) to the specified value using RV014.

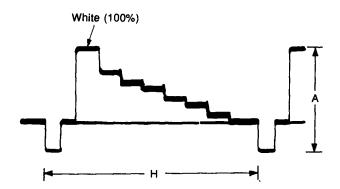


Fig. 6-2-23.

3. Analog E-E Chroma Signal Output Level Adjustment (VA-97 Board)

Mode	E-E
Signal	Color bar (S VIDEO input)
Measurement Point	Chroma signal terminal of S video output terminal
Measuring Instrument	Oscilloscope
Adjusting Element	RV015
Specified Value	A=660 ± 10 mV

Note 1: Terminate the chroma signal terminal of the S video output terminal using a 75 Ω resistor.

75 Ω resistor (Parts code: 1-247-804-11)

Note 2 : Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEOS

Adjusting method:

 Set the red signal level (A) to the specified value using RV015.

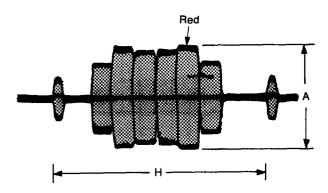


Fig. 6-2-24.

4. Analog E-E VIDEO Signal Output Level Check (VA-97 Board)

Mode	E-E
Signal	Color bar (S VIDEO input)
Measurement Point	Video output terminal (CL155)
Measuring Instrument	Oscilloscope
Specified Value	A=1.00 ± 0.06 V

Note 1: Terminate the video output terminal using a 75 Ω resistor.

75 Ω resistor (Parts code: 1-247-804-11)

Note 2: Set to the following at the SET UP menu of the menu

L4 IN VIDEOS

Adjusting method:

1) Check that the VIDEO signal level (A) is the specified value.

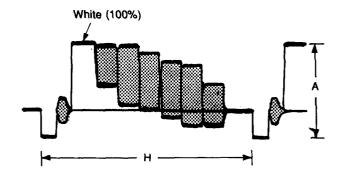


Fig. 6-2-25.

5. Decoder VXO Freerunning Frequency Adjustment (VA-97 Board)

Mode	E-E
Signal	No signal
Measurement Point	Q007 emitter (CL044) or
	Pin 24 of CN003
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	4A
Specified Value	A=4433619 ± 20 Hz

Note 1 : Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEOS

Adjusting method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 20 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 3) Turn OFF and then ON the power.
- 4) Change the data of page: D, address: 4A, and adjust the VXO oscillation frequency (f) to the specified value.
- 5) Press the PAUSE button of the adjusting remote control unit.
- 6) Set data: 00 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 7) Set data: 00 to page: 1, address: 00.

6. Decoder HUE Adjustment (VA-97 Board)

Mode	E-E
Signal	Color bar (\$ VIDEO input)
Measurement Point	Q021 emitter (CL057) or
	Pin ③ of CN002
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	49
Specified Value	A=Minimum

Note 1 : Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEOS

- 1) Set data: 01 to page: 1, address: 00.
- 2) Change the data of page: D, address: 49 so that the waveform does not appear double.
- 3) Press the PAUSE button of the adjusting remote control unit.
- 4) Set data: 00 to page: 1, address: 00.

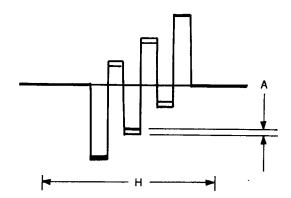


Fig. 6-2-26.

7. REC Y Level Adjustment (VA-97 Board)

Mode	E–E
Signal	Color bar (S VIDEO input)
Measurement Point	Pin ⑦ of CN002 (CL042)
Measuring Instrument	Oscilloscope
Adjusting Element	RV002
Specified Value	A=1.55 ± 0.02 V

Note 1 : Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEOS

Adjusting method:

1) Set the Y signal level (A) to the specified value using RV002.

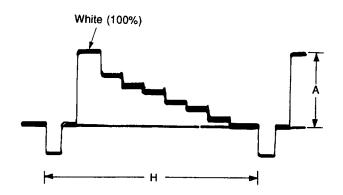


Fig. 6-2-27.

8. REC CR Level Adjustment (VA-97 Board)

Mode	E–E
Signal	Color bar (S VIDEO input)
Measurement Point	Pin ⑤ of CN002 (CL056)
Measuring Instrument	Oscilloscope
Adjusting Element	RV006
Specified Value	A=1.23 ± 0.02 V

Note 1: Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEOS

Adjusting method:

1) Set the CR signal level (A) to the specified value using RV006.

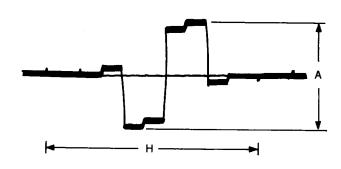


Fig. 6-2-28.

9. REC CB Level Adjustment (VA-97 Board)

Mode	E–E
Signal	Color bar (S VIDEO input)
Measurement Point	Pin ③ of CN002 (CL058)
Measuring Instrument	Oscilloscope
Adjusting Element	RV007
Specified Value	A=1.23 ± 0.02 V

Note 1: Set to the following at the SET UP menu of the menu screen.

L4 IN VIDEOS

Adjusting method:

1) Set the CB signal level (A) to the specified value using RV007.

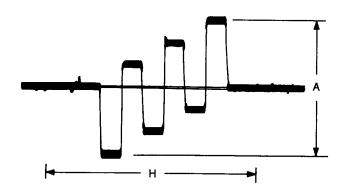


Fig. 6-2-29.

10. NPS 4 fsc Freerunning Frequency Adjustment (VA-97 Board)

Mode	Playback
Signal	Any tape
Measurement Point	Pin 26 of IC012 (CL128)
Measuring Instrument	Frequency counter
Adjusting Element	CT001
Specified Value	A=17734478 ± 100 Hz

Adjusting method:

1) Set the oscillation frequency (f) to the specified value using CT001.

11. Playback Y Level Check (VA-97 Board)

Mode	Playback Any tape	
Signal		
Measurement Point	Y signal terminal of S video output terminal (CL998 or CL159)	
Measuring Instrument	t Oscilloscope	
Specified Value	$A=0.825 \pm 0.02 \text{ V}$	

Note 1 : Terminate the Y signal terminal of the S video output terminal using a 75Ω resistor.

75 Ω resistor (Parts code: 1-247-804-11)

Note 2: Perform this check after confirming that the specified value in the following adjustment of the JC-13 board has been satisfied.

1. Playback Y Signal Level Adjustment

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 15 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 3) Set data: 04 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 4) Set data: 09 to page: 5, address: 02.
- Check that the Y signal level (A) satisfies the specified value.
- 6) Set data: 00 to page: 5, address: 02.
- 7) Set data: 25 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 8) Set data: 00 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 9) Set data: 00 to page: 1, address: 00.

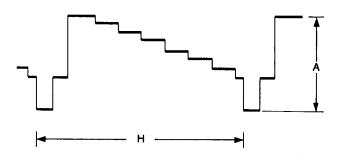


Fig. 6-2-30.

12. Playback Chroma Level Adjustment (VA-97 Board)

Mode	Playback	
Signal	Any tape	
Measurement Point	Chroma signal terminal of S video output terminal (CL997 or CL157)	
Measuring Instrument	Oscilloscope	
Adjusting Element	RV009	
Specified Value	A=660 ± 10 mV	

Note 1 : Terminate the chroma signal terminal of the S video output terminal using a 75 Ω resistor. 75 Ω resistor (Parts code: 1-247-804-11)

Note 2: Perform this adjustment after confirming that the specified value in the following adjustment of the JC-13 board has been satisfied.

- 1. Playback CR Signal Level Adjustment
- 2. Playback CB Signal Level Adjustment

Adjusting method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 15 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 3) Set data: 04 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 4) Set data: 09 to page: 5, address: 02.
- Set the red signal level (A) to the specified value using RV009.
- 6) Set data: 00 to page: 5, address: 02.
- 7) Set data: 25 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 8) Set data: 00 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 9) Set data: 00 to page: 1, address: 00.

13. Playback Burst Level Adjustment (VA-97 Board)

Mode	Playback	
Signal	Any tape	
Measurement Point	Chroma signal terminal of S video output terminal (CL997 or CL157)	
Measuring Instrument	Oscilloscope	
Adjusting Element	RV013	
Specified Value	A=300 ± 10 mV	

Note 1: Terminate the chroma signal terminal of the S video output terminal using a 75 Ω resistor.
75 Ω resistor (Parts code:1-247-804-11)

Note 2: Perform this adjustment after confirming that the specified value in the following adjustment of the JC-13 board has been satisfied.

- 1. Playback CR Signal Level Adjustment
- 2. Playback CB Signal Level Adjustment

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 15 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 3) Set data: 04 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 4) Set data: 09 to page: 5, address: 02.
- Set the burst signal level (A) to the specified value using RV013.
- 6) Set data: 00 to page: 5, address: 02.
- 7) Set data: 25 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 8) Set data: 00 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 9) Set data: 00 to page: 1, address: 00.

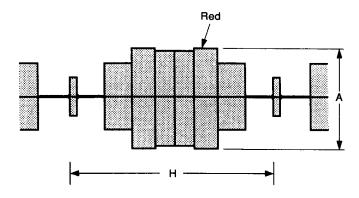


Fig. 6-2-31.

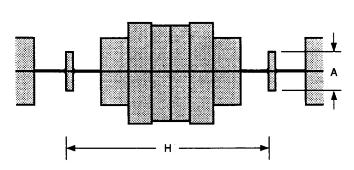


Fig. 6-2-32.

2-5-6. General Adjustment

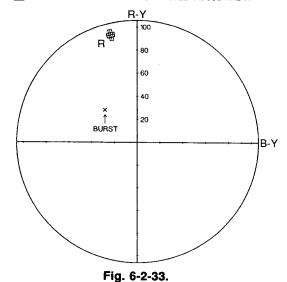
1. Encoder R-Y Input Level Adjustment (JC-13 Board)

Mode	E-E	
Signal	Color bar	
Measurement Point	Chroma signal terminal of S video output terminal (Terminated at 75 Ω)	
Measuring Instrument		
Adjusting Element	RV004	
Specified Value	Phase : 104 ± 2°	
	Gain : 95 ± 2 %	

Adjusting method:

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 15 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 3) Set data: 04 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 4) Set data: 09 to page: 5, address: 02.
- 5) Adjust the burst luminance point to the specified position using the PHASE and GAIN knobs of the vectorscope.
- 6) Set the red luminance point inside the specified range (range enclosed in the thick line) using RV004.
- 7) Set data: 00 to page: 5, address: 02.
- 8) Set data: 25 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 9) Set data: 15 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 10) Set data: 00 to page: 1, address: 00.

⊞ : FOR ENCODER R-Y INPUT LEVEL ADJUSTMENT



2. Decoder HUE Input Adjustment (JC-13 Board)

Mode	E-E	
Measurement Point	Chroma signal terminal of S video output terminal (Terminated at 75 s	
Measuring Instrument	Vectorscope	
Adjustment Page	D	
Adjustment Address	49	
Specified Value	Phase : 104 ± 1°	
	Gain : 95 ± 5 %	

- 1) Set data: 01 to page: 1, address: 00.
- Set data: 15 to page: D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 3) Set data: 04 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 4) Set data: 00 to page: 5, address: 02.
- 5) Adjust the burst luminance point to the specified position using the PHASE and GAIN knobs of the vectorscope.
- 6) Change the data of page: D, address: 49, and set the red luminance point inside the specified range (range enclosed in the thin line).
- 7) Press the PAUSE button of the adjusting remote control unit.
- 8) Set data: 25 to page:D, address: 02, and press the PAUSE button of the adjusting remote control unit.
- 9) Set data: 00 to page: D, address: 04, and press the PAUSE button of the adjusting remote control unit.
- 10) Set data: 00 to page: 1, address: 00.

⊞ : FOR DECODER HUE ADJUSTMENT

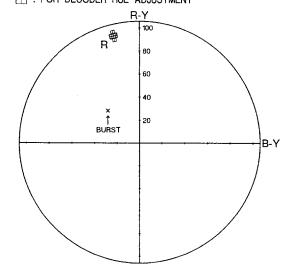


Fig. 6-2-34.

2-6. AUDIO SYSTEM ADJUSTMENT

Unless specified otherwise, set the switches as follows.

LINE IN AUDIO (Menu display)	16
AUDIO MONITOR (Tray)	STEREO 1
AUDIO MIX BALANCE	Center Click
REC BALANCE	Center Click
REC LEVEL	Center Click
Note: Set LINE IN AUDIO at the S	ET UP menu of the
menu screen.	

[Connection of Equipment]

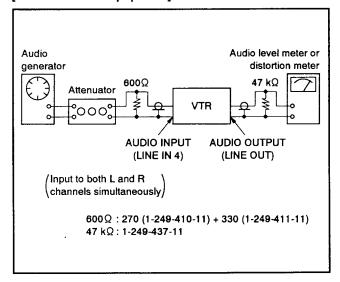


Fig 6-2-35.

1. Playback Level Check

Mode	Playback							
Signal	Audio check reference tape							
Measurement Point	Audio output terminal (Left and right)							
Measuring Instrument	Audio level meter and frequency counter							
	32 kHz mode:							
	The 1 kHz signal should be output.							
	48 kHz mode:							
	The 1 kHz signal level should be							
	$6 \pm 2 \text{ dBv } (+8.2 \pm 2 \text{ dBs})$							
	44.1 kHz mode EMP ON:							
Specified Value	The 7.35 kHz signal level is -6 ± 2							
	dB for the 1 kHz signal level in							
	the 48 KHz mode							
	44.1 kHz mode EMP OFF:							
	The 7.35 kHz signal level is 0 ± 1							
	dB for the 1 kHz signal level in							
	the 48 kHz mode							

Note : 0 dBv=1 Vrms 0 dBs=0.775 Vrms

Checking method:

 Check that the playback signal level satisfies the specified value.

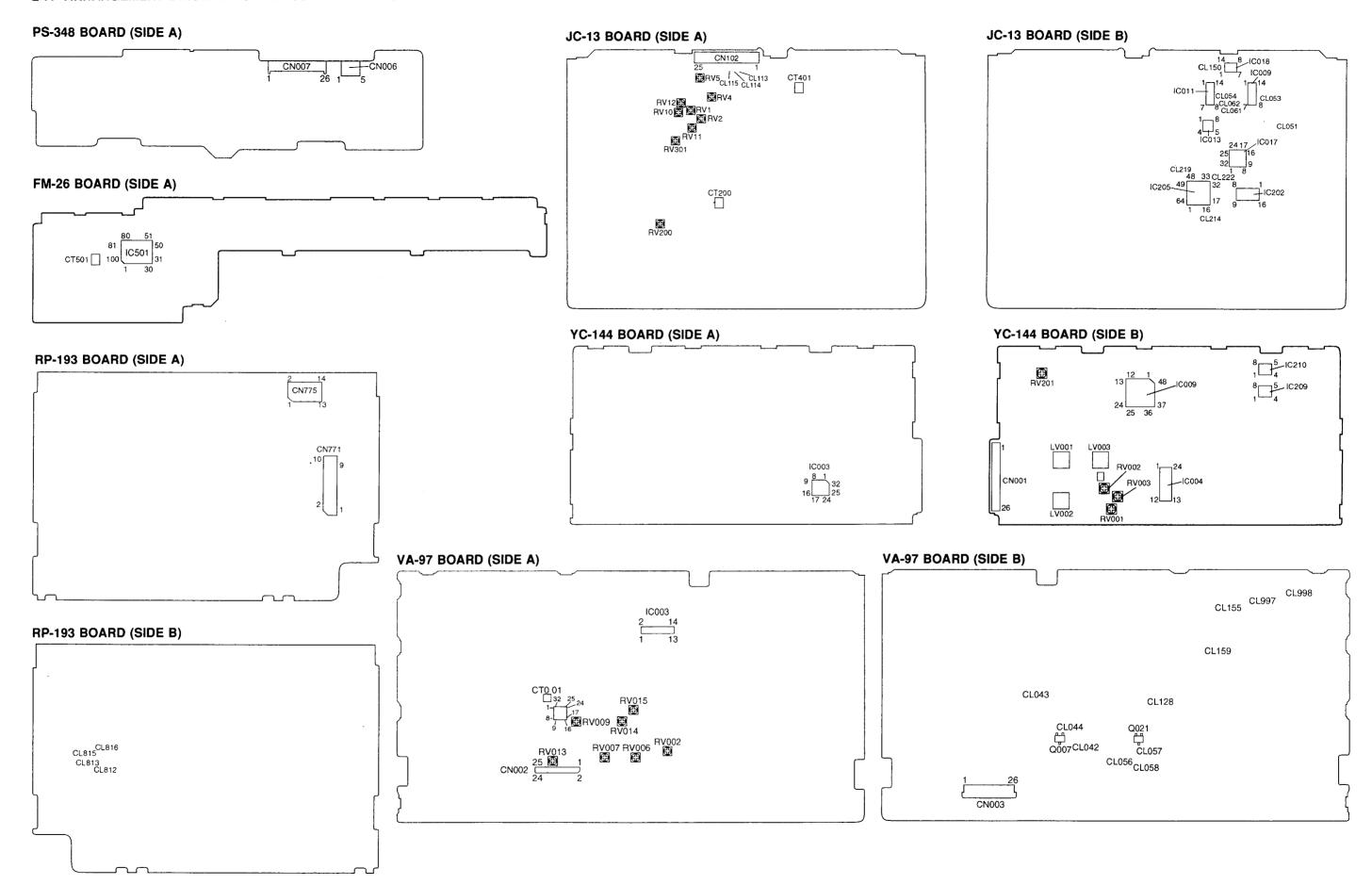
2. E-E Level Check

Mode	E-E
Signal	1 kHz -6 dBv (-3.8 dBs) signal:
Signal	Audio input terminal (Left and right)
Measurement Point	Audio output terminal (Left and right)
Measuring Instrument	Audio level meter
Specified Value	$-6 \pm 3 \text{ dBv } (-3.8 \pm 3 \text{ dBs})$

Checking method:

- 1) Check that the 1 kHz signal level satisfies the specified value.
- 2) Check that the number in the segment of the level meter (fluorescent display tube) that is lit is between 8 and 12 for both the L and R channels.

2-7. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS



6-32

6-3. SERVICE MODE

3-1. ADJUSTING REMOTE COMMANDER

The adjusting remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjusting remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the adjusting remote commander

- 1) Connect the adjusting remote commander to the remote terminal
- 2) Set as follows at the SET UP menu of the menu screen. LANC MODES
- 3) Adjust the HOLD switch of the adjusting remote commander to "HOLD" (SERVICE position).

If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 6-3-1.

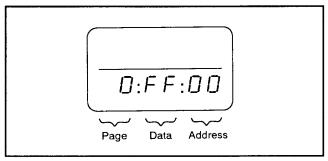


Fig. 6-3-1.

- 4) Operate the adjusting remote commander as follows.
 - · Changing the page

The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH- button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal		1	_	<u>,</u>	_		_	7		_		n		_	Б	Б
notation	١٧	1	Z	3	4	3	O	/	ð	9	А	В	C	ט	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	Ь	۲	d	Ε	F
Decimal notation	_	1	2	2	4	-	۷	7	0	0	10	11	12	12	1.4	15
conversion value	Ľ	1			-4	<i></i>	o		٥	7	10	11	12	13	14	13

Table 6-3-1.

- · Changing the address
 - The address increases when the FF (►►) button is pressed, and decreases when the REW (◄◄) button is pressed. There are altogether 256 addresses, from 00 to FF.
- Changing the data (Data setting)
 The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed.
 - There are altogether 256 data, from 00 to FF.
- Writing the adjustment data
 The PAUSE button must be pressed to write the adjustment data (F page) in the nonvolatile memory.
 (The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed.)

2. Precautions upon using the adjusting remote commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

3-2. DATA PROCESSING

The calculation of the DDS display and the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Table 6-3-2. indicates the hexadecimal notation-the decimal notation calculation table.

C #1 1	,	<u> </u>														
The lower digits of the hexadecimal notation The upper digits of the hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A (<i>H</i>)	B (b)	C (c)	D (d)	E (E)	
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	l
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	Ī
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	T
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	1
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	1
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	1
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	1
A (fl)	160	161	162	163	104	165	166	167	168	109	170	171	172	173	174	1
B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	1
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	2
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	2
E (£)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	1
F (<i>F</i>)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	2

Note: () indicate the adjusting remote control unit display.

(Example) In the case that the DDS display and the adjusting remote control unit display are BD (bd).

As the upper digit of the hexadecimal notation is B (b), and the lower digit is D (d), the intersection "189" of the ① and ② in the above table is the decimal notation to be calculated. conversion table

Table 6-3-2.

3-3. SERVICE MODE

1. Setting the Test Mode

Page D	Address 03

Data	Function	
00	Normal	
01	Forced camera power ON	
02	Forced VTR power ON	
03	Forced camera+VTR power ON	

- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjusting remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off (7.2 Vdc).
- After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE button of the adjusting remote commander.

Set data: 00 to page: 1, address: 00.

2. Emergence Memory Address

Page C	Addresses 30 to 3B

Address	Contents
30	EMG code when first error occurs
22	Upper: MSW code when shift starts when first error occurs
32	Lower: MSW code when first error occurs
33	Lower: MSW code to be moved when first error occurs
34	EMG code when second error occurs
2.6	Upper: MSW code when shift starts when second error occurs
36	Lower: MSW code when second error occurs
37	Lower: MSW code to be moved when second error occurs
38	EMG code when last error occurs
2.	Upper: MSW code when shift starts when last error occurs
3A	Lower: MSW code when last error occurs
3B	Lower: MSW code to be moved when last error occurs

When no error occurs in the unit, data 00 is written in the above addresses (30 to 3B). When the first error occurs in the unit, the data corresponding to the error is written in the first emergency address (30 to 33). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (34 to 37).

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (38 to 3B). Consequently, addresses 38 to 3B are updated each time errors occur.

Note 1: After completing adjustments, be sure to rewrite the data of addresses 30 to 3B to 00.

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 00 to page: C, address: 30, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 31, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: C, address: 32, and press the PAUSE button of the adjusting remote commander.
- 5) Set data: 00 to page: C, address: 33, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 00 to page: C, address: 34, and press the PAUSE button of the adjusting remote commander.
- 7) Set data: 00 to page: C, address: 35 and press the PAUSE button of the adjusting remote commander.
- 8) Set data: 00 to page: C, address: 36 and press the PAUSE button of the adjusting remote commander.
- 9 Set data: 00 to page: C, address: 37 and press the PAUSE button of the adjusting remote commander.
- 10) Set data: 00 to page: C, address: 38, and press the PAUSE button of the adjusting remote commander.
- 11) Set data: 00 to page: C, address: 39, and press the PAUSE button of the adjusting remote commander.
- 12) Set data: 00 to page: C, address: 3A, and press the PAUSE button of the adjusting remote commander.
- 13) Set data: 00 to page: C, address: 3B, and press the PAUSE button of the adjusting remote commander.
- 14) Set data: 00 to page: 1, address: 00, and press the PAUSE button of the adjusting remote commander.

2-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in addresses E4, E8, EC. The type of error indicated by the code are shown in the following table.

Code	Error Type
00	No error (Initial state)
10	Loading motor time-out during LOAD
11	Loading motor time-out during UNLOAD
20	Reel motor error
22	T reel error
23	S reel error
24	Swing error
32	Error during normal capstan rotation
33	Cassette compartment LOAD error
35	Cassette compartment UNLOAD error
40	FG error during drum start-up
42	FG error during normal drum rotation
50	DEW detection
52	Wet DEW detection
60	Electrical tension regulator error

2-2. MSW Codes

MSW during error:

Information on MSW (mode SW) when errors occur

MSW when mechanism starts moving:

Information on MSW when the mechanism starts moving, when changing the mechanism position (when moving the L motor). MSW of target destination of movement:

Information on MSW of target destination moved to when changing the mechanism position.

Mechanical Position

←UNLOAD

LOAD →

T	OFF	BL	UL	BL	REEL	BL	TG2ON	BL	DS	BL	STOP	BL	FR	BL	BRAKE	BL	RP	BL	STILL
	0	1		1					0	_			(1	1	1	1		
ļ	110=6		110=E	111:	100=C	111	010=A		0001=F	111:	0111:	1	0011	111:	001	1	101=D	<u> </u>]
!	# I	4	<u> </u>	ᄞ	<u>ل</u> ا	#	, "	III	" 	1=#	1=7	4	1=3	11	1=9	1=F	<u>"</u>	<u> </u>	
!																		 -	
!																			!!
!	ļ														1			 -	
ı	1				l													l	l !
									•								Dinoh m	ماامه	pressing

Position	Code	Contents
TOFF	6	Position at which the T ratchet is released. Mechanically, it is the position at the furthest UNLOAD side, at which the mechanism cannot move anymore in the UNLOAD direction.
BL	F	BLANK code. Divides between codes. The mechanism will not stop at this code. (Except LOAD/UNLOAD).
UL	Е	The cassette compartment UP/DOWN is performed at this position.
REEL	С	Reel control position
TG2ON	Α	S side tension regulator turns ON.
DS	1	Position at which the tape touches the drum. The drum starts-up.
STOP	7	Stop position. The pinch is released and the tension regulator returns to impose a brake on the two reels.
FR	3	FF/REW position. Pinch off state. Stops at this position in the EMG1 state.
BRAKE	9	Used when stopping from FF/REW.
RP	D	The pinch roller is compressed and the tension regulator is ON. REC and the mode where normal images are output operate at this position.
STILL	5	Position for preventing damages to the scanner during P.B.P. The S side tension regulator loosen.
NULL	0	Code not existing in MD. When errors occur when error states are memorized and the L motor is not driven, this code is memorized.

DHR-1000B/NP/UX/VC

SONY. SERVICE MANUAL

AEP Model
DHR-1000NP/VC

UK Model
DHR-1000UX

French Model
DHR-1000B

SUPPLEMENT-1

File this supplement with the service manual. (96-013)

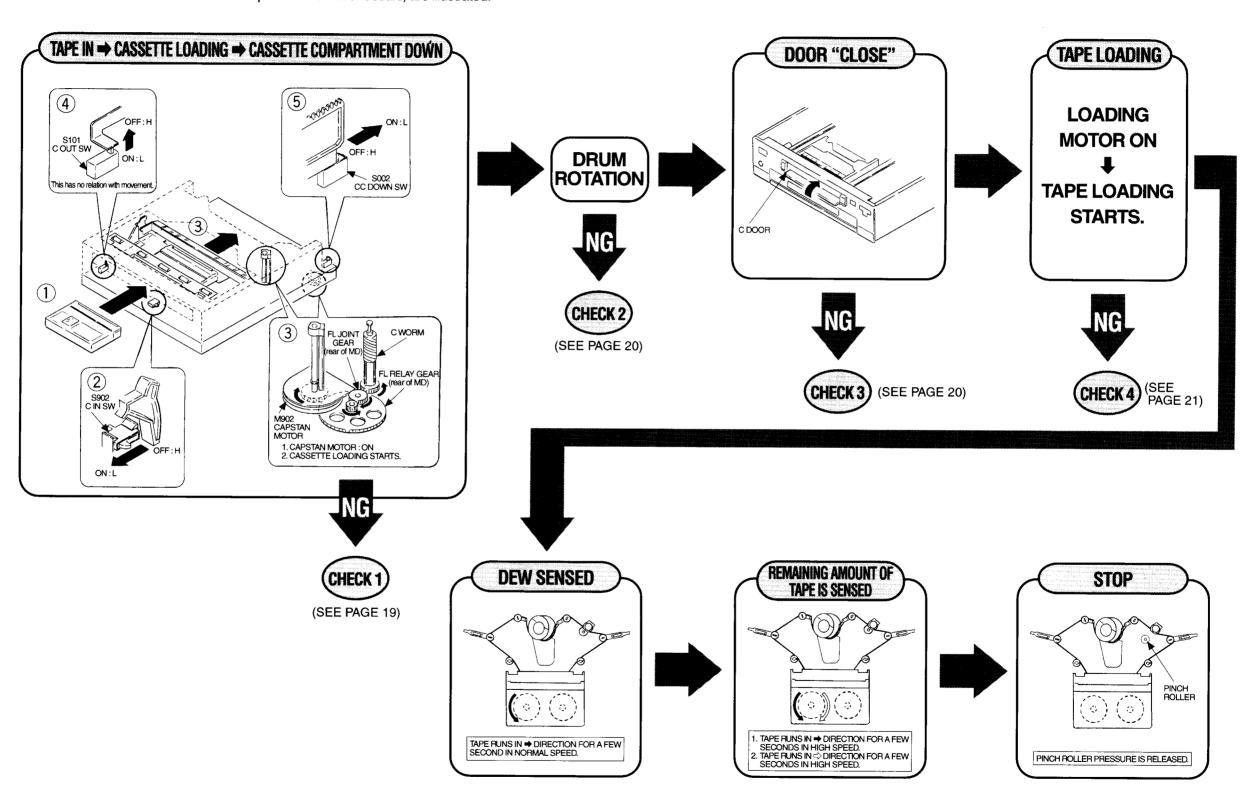
Subject: BLOCK DIAGRAM addition

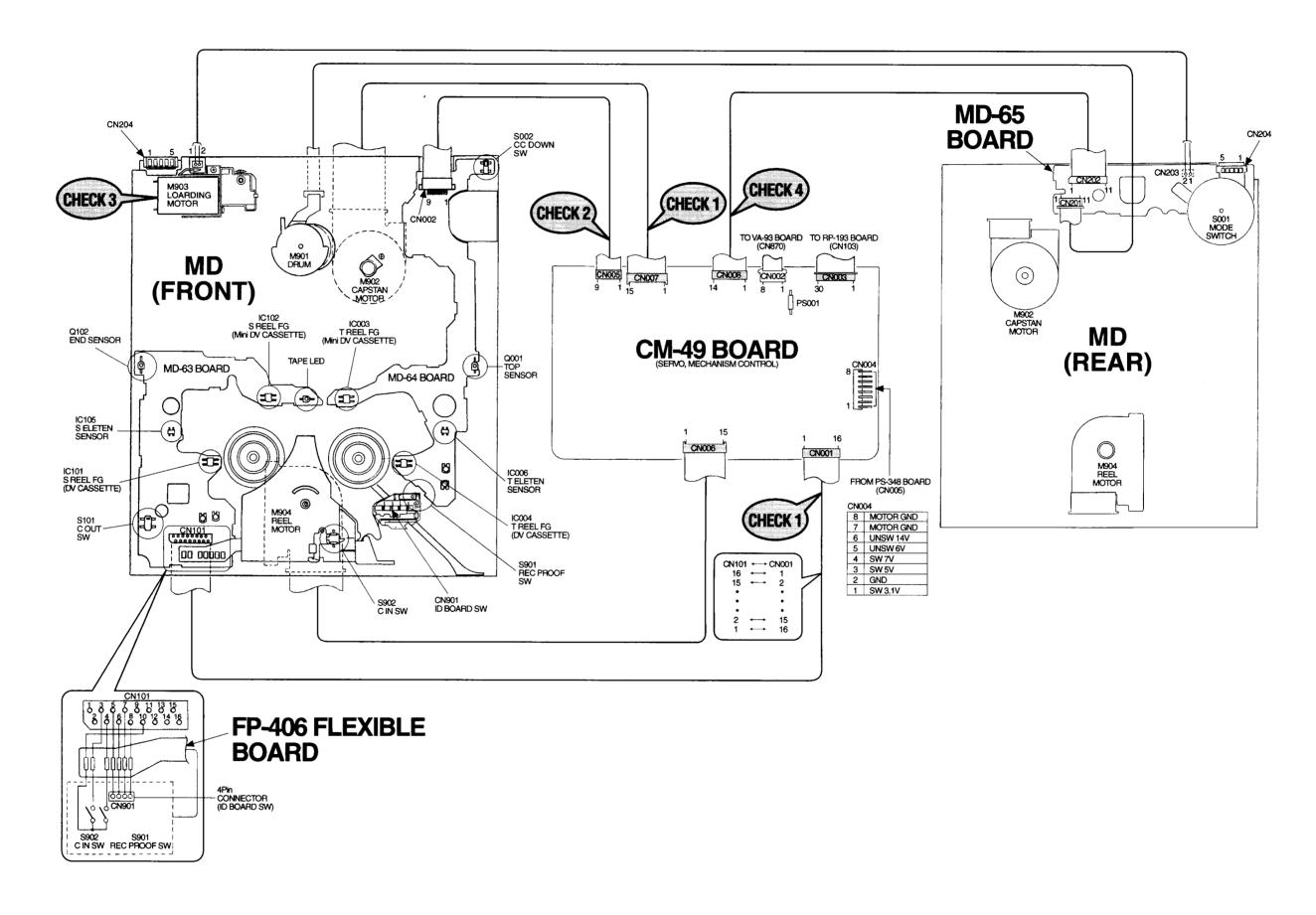
TABLE OF CONTENTS

3. BLOCK DIAGRAM	
3-1. Overall Block Diagram (1)	
3-2. Overall Block Diagram (2)	7
3-3. Power Block Diagram	
FLOW CHART TAPE IN → STOP (LOADING COMPLETED)	•

FLOW CHART FROM TAPE IN UP TO STOP (LOADING END)

• Movement of mechanism and check points when error occurs, are illustrated.





CHECK 1

Electrical System Check

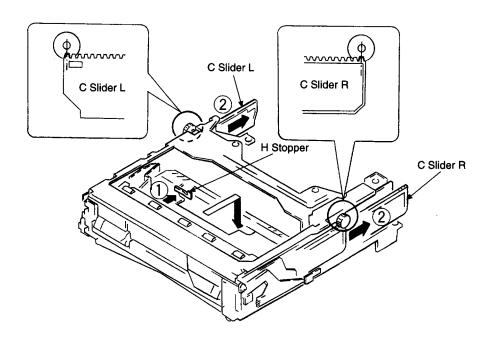
Ref. No.	Pin No.	Pin Name	I/O	Check
CN001	14	CIN	I	CASSETTE IN switch input. CASSETTE IN: "L"

Mechanism Check

• Check movement of cassette compartment by moving it down manually after removing the FL (cassette compartment) block assembly from mechanism deck.

"How to move down the cassette compartment"

While pressing the H Stopper in the direction of the arrow shown as ①, press both C Slider L and C Slider R at the same time in the direction of the arrow shown as ②.
 If the cassette compartment does not move smoothly when it is moved down manually, check that phase of the C Sliders L and R match (when the cassette compartment moves up).



Remark: If tape loading starts abruptly and unexpectedly, or tape loading stops in its middle and returns, poor connections of the connectors are suspected. Check connection of CN001 (CM-49 board). If tape loading does not start at all, check connection of CN007 (CM-49 board).

CHECK 2

Electrical System Check

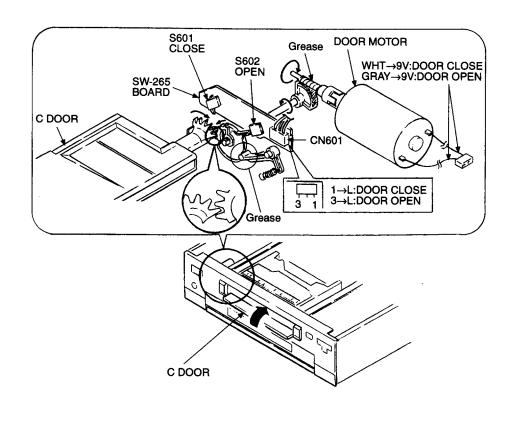
Ref. No.	Pin No.	Pin Name	I/O	Check
CN005	2	CC DOWN	I	CC DOWN switch input. CASSETTE COMPARTMENT DOWN: "L"

CHECK 3

Electrical System and Mechanism Check

Note: Do not touch the parts on which grease is coated. (It causes defective operation of mechanism.) If parts are replaced or grease is wiped off by mistake, coat the parts with the specified grease.

• Grease → FLOIL (SG-055G) : Part No. 7-651-000-09



CHECK 4

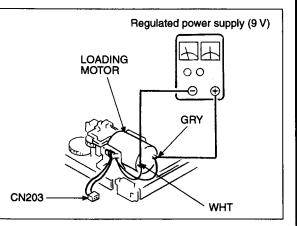
Electrical System Check

Ref. No.	Pin No.	Pin Name	I/O	Check
CN008	6	LM LOAD	0	LOADING: "H"
C.1000	7	LM UNLOAD	0	UNLOADING: "H"

Mechanism Check

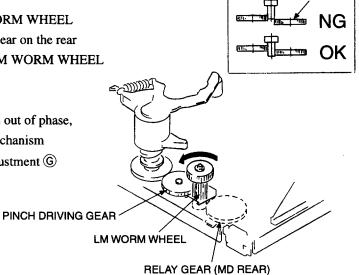
- When a loading motor is working normally:
 - 1. Remove CN203. (for protecting circuit)
 - Remove tape from the machine. Connect a regulated power supply as shown. Check if tape loading is performed or not.
 - 3. If tape loading stops in its middle, as a result of the check, it may be caused by defective parts or phase errors of the mechanism.

Check various phases of the mechanism referring to the DV Mechanism Adjustment Manual $\, \mathbb{I} \,$.



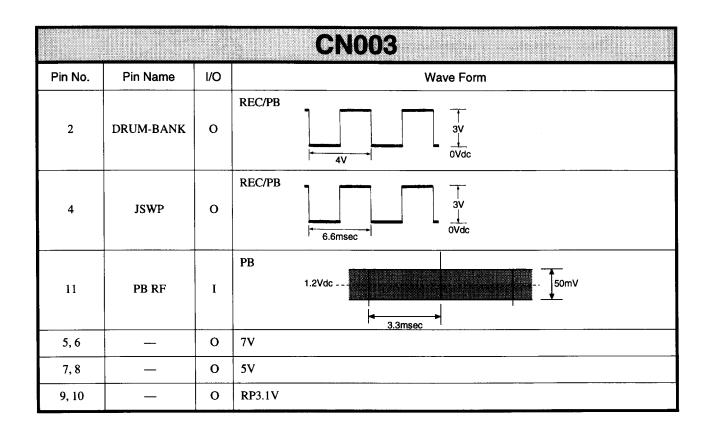
Remark: How to start tape loading without loading motor

- 1. Remove a loading motor.
- Rotate the LM WORM WHEEL in the direction of the arrow as shown by hand.
 However, if you rotate the LM WORM WHEEL while it is engaged with the relay gear on the rear side of the mechanism deck, the LM WORM WHEEL will become out of phase.
- If the LM WORM WHEEL becomes out of phase, adjust it by referring to the DV Mechanism Adjustment Manual II, Phase Adjustment © (on page 9).

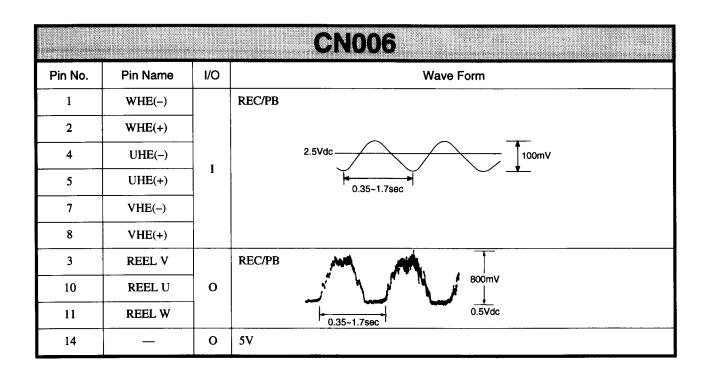


RELAY GEAR

			CN001
Pin No.	Pin Name	1/0	Wave Form
1	L S REEL FG	I	DV CASSETTE REC/PB 0.25-0.8sec 0.9vdc
3	S S REEL FG	I	Mini DV CASSETTE REC/PB 2V 0.16~0.4sec 0.9Vdc
8	TAPE LED	0	REC/PB 1.3V OVdc
13	REC PROOF	I	"L" : RECORDING POSSIBLE
14	C IN	I	"L" : DURING CASSETTE COMPARTMENT MOVING PERIOD
15	C OUT	I	"L" : CASSETTE IS EJECTED
2, 6	_	0	5V



	CN005									
Pin No.	Pin Name	1/0	Wave Form							
5, 6	_	0	5V							
1	S T REEL FG	I	Mini DV CASSETTE REC/PB O.16~0.4sec O.9Vdc							
2	CC DOWN	I	"L" : DOWN							
7	L T REEL FG	I	DV CASSETTE REC/PB 2v 0.9vdc							



			CN007
Pin No.	Pin Name	1/0	Wave Form
3	FG OUT(+)	_	REC/PB 2.5Vdc 50mV
4	FG OUT(-)	I	1.1msec
. 5	CAP W		REC/PB
6	CAP U	o	0.4V
13	CAP V		140msec 0.4Vdc
8	UHE(+)		REC/PB
9	UHE(-)		
11	VHE(+)		2.5Vdc 100mV
12	VHE(-)	I	<u>+</u>
14	WHE(+)		140msec
15	WHE(-)		
2		0	5V

			C	N008							
Pin No.	Pin Name	1/0	Wave Form								
2	MODE SW A		Pin Name	REC/PB	STOP	No Cassette					
3	MODE SW B	1	MODE SW A	Н	Н	L					
4	MODE SW C	I	MODE SW B	L H	H H	H H					
		1	MODE SW C MODE SW D	H	L	л Н					
5	MODE SW D	_	MODES W B								
6	LM LOAD	О	"H" : THREADIN	"H": THREADING							
7	LM UNLOAD	0	"H" : UNTHREADING								
8	DRUM W		REC/PB M M								
9	DRUM V	0	$\int \int $								
10	DRUM U			1.1msec	-l	0Vdc					
12	DRUM FG	I	REC/PB 2Vdc -	1.1msec		0.2V					
13	DRUM PG	I	REC/PB 2Vdc	6.6mse	ec	30mV					

DHR-1000B/NP/UX/VC

SONY®

SERVICE MANUAL

Ver 1.0 2000, 11

AEP Model

DHR-1000NP/VC

UK Model

DHR-1000UX

French Model

DHR-1000B

SUPPLEMENT-2

File this supplement with the service manual. (PV00-017)

Suffix Nos. of the board are changed.

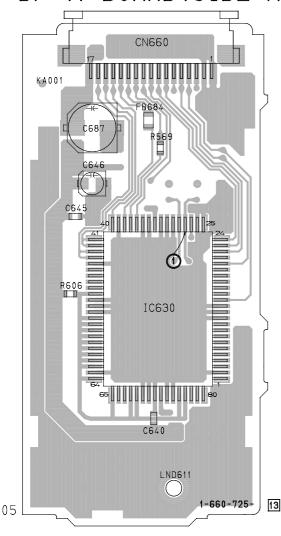
SECTION 4 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

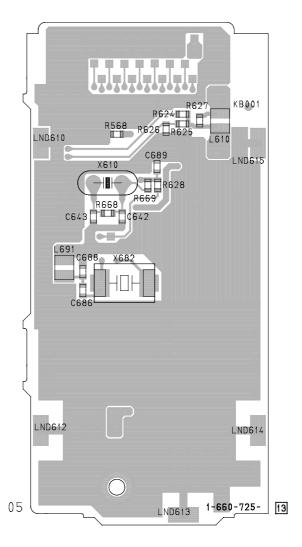
DF-11 (DIGITAL FILTER) PRINTED WIRING BOARD

- Ref. No. DF-11 BOARD: 1,000 series -

DF-11 BOARD(SIDE A)



DF-11 BOARD(SIDE B)



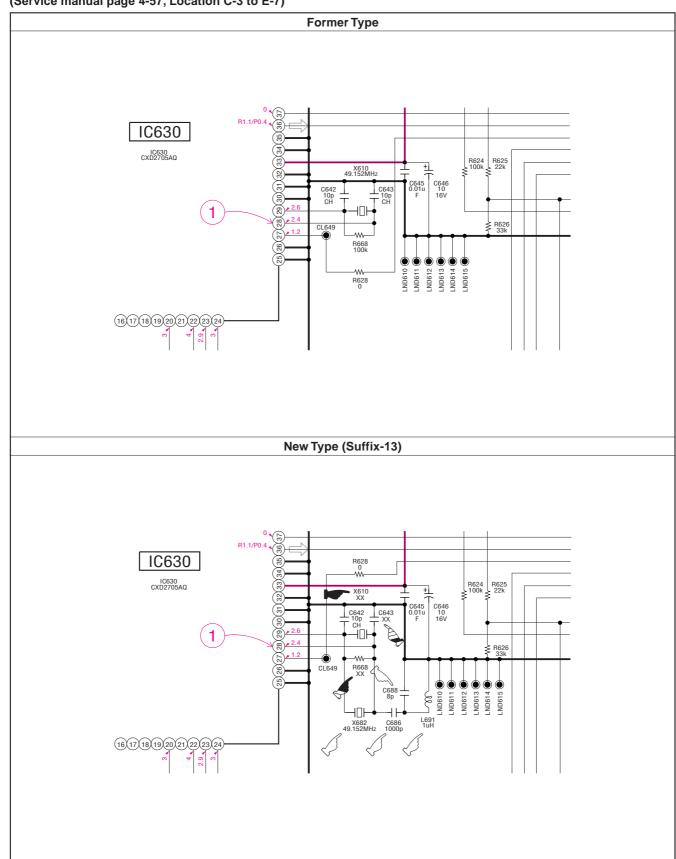
For Printed Wiring Board.

 There are a few cases that the part isn't mounted in this model is printed on this diagram. : Points added portion. : Points changed portion.

DF-11 (DIGITAL FILTER) SCHEMATIC DIAGRAM

- Ref. No. DF-11 BOARD: 1,000 series -

(Service manual page 4-57, Location C-3 to E-7)



SECTION 5 REPAIR PARTS LIST

: Points changed portion. 5-1. EXPLODED VIEWS

NOTE:

 Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

5-1-4. CHASSIS ASSEMBLY (1)

Page			Former Type	New Type (Suffix-13)				
	Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>	Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>
5-4	* 170	A-7072-613-A	DF-11 (C) BOARD, COMPLETE		* 170	A-7072-613- <u>B</u>	DF-11 (C) BOARD, COMPLETE	

5-2. ELECTRICAL PARTS LIST

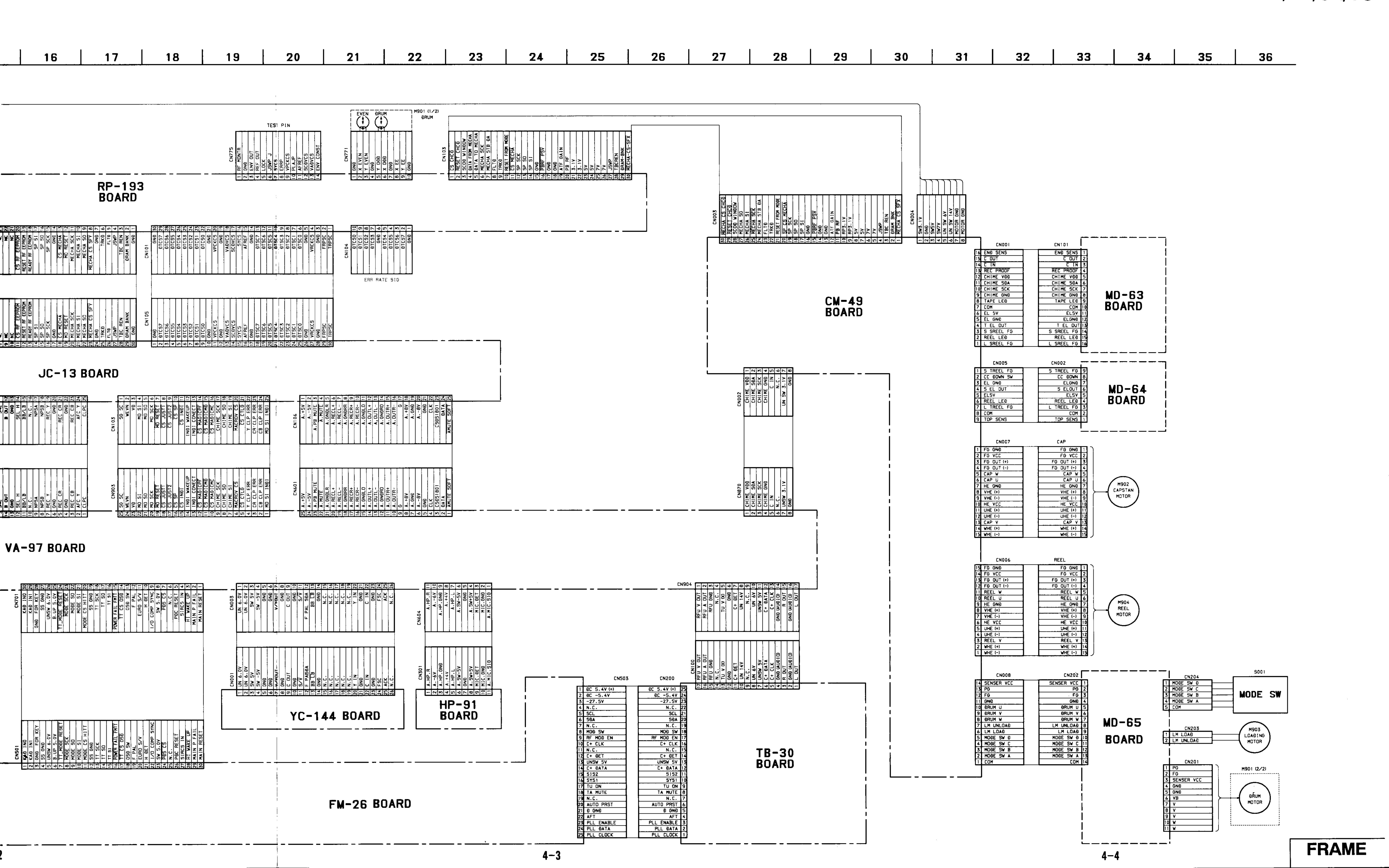
NOTE:

 Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

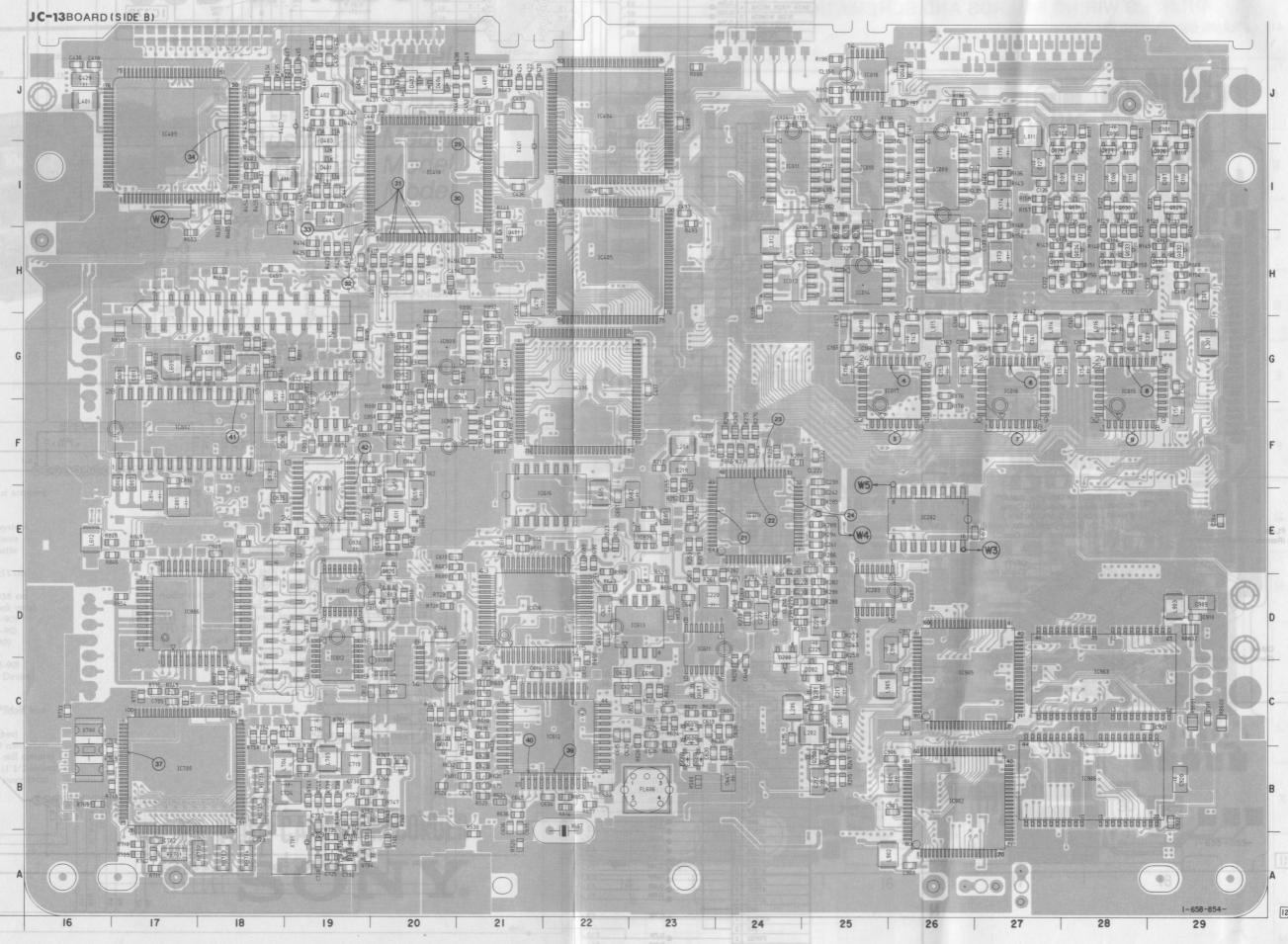
Page			Former Type				New Type (Suffix-13)						
	Ref. No.	Part No.	<u>Description</u>			Remark	Ref. No.	Part No.	<u>Description</u>			Remark	
	*	A-7072-613-A	DF-11 (C) BOARD	,			*	A-7072-613- <u>B</u>	DF-11 (C) BOARD, COMPLETE ***********************************				
	(Ref. No. 1,000 Series)						(Ref. No. 1,000 Se				0 Series)		
	C643	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C643						
5-17	C686 C688						C686 C688	1-162-964-11 1-162-913-11	CERAMIC CHIP	1000PF 8PF	10% 0.5%	50V 50V	
• • •	0000						0000	1 102 310 11	OLITAWIO OTIII	011	0.0 /0	30 V	
	L691						L691	1-410-369-11	INDUCTOR CHIP	1uH			
	R668	1-216-845-11	METAL CHIP	100K	5%	1/16W	R668						
	X610 X682	1-579-069-11	VIBRATOR, CRYS	STAL (49.1	152MHz)	X610 X682	1_767_770_91	VIBRATOR, CRYS	TAL (40 1	50MHz	`	
	۸۵۵۷					Λ002	1-101-119-21	VIDNATUR, URTO	IAL (49.	JZIVITZ)		

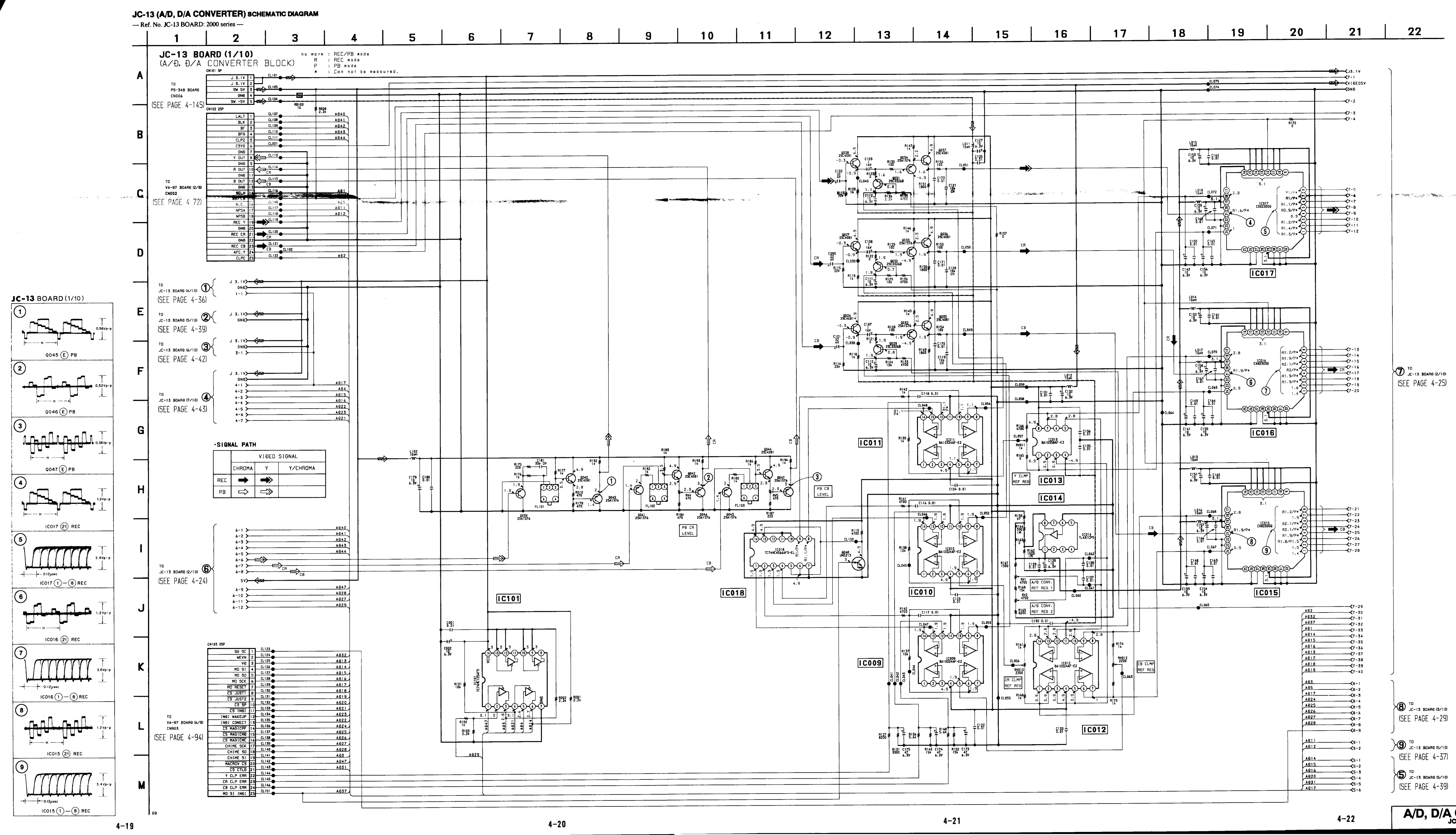
SECTION 4 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS


4-1. FRAME SCHEMATIC DIAGRAM 15 8 CN003 1 SW3.1V 2 GND 3 SW5V 4 SW7V 5 DRUM6V 6 MOTOR14V 7 MDTOR GND UNGER -10V 4 AUĐIO GNĐ MOTOR GND MOTOR GND UNREG 4V UNREG 4V MOTOR 14V MOTOR 14V UNREG 14V UNREG 14V IN-51 **BOARD** - 2 M 4 G B B PS-348 BOARD PS-347 **BOARD** UNSW -5V 2 UN5W -5V 4 UN5W 5V SW 5V SW 3.1V 6 7 UNREG 4V UNREG 4V 7 CN101 JC-13 J 3.1V SW 5V SW-5V 5 CN901 M UNLOAD M LOAĐ - 2 K 4 D 5W 1 SW 2 POWER MOTOR GND MOTOR GND BLOCK 20 N.C. N.C. UNSW 9V UNSW 5V SW 5V UNREG 6V UNREG 6V UNREG 6V UNREG 6V DF-11 BOARD UNSW 3.1V UNSW 3.1V VA-97 BOARI 6 UNSW -5V UNSW -SV VIDED -5V V10E0 -5V AUÐ10 -6V AUÐ10 -10V AU010 -6V AU810 -10V POWER CONT POWER CONT MOTOR じゅいはほじにゅうめて 954 50-- 2 m 4 G 9 7 B 6 D 7 T 7 T 7 T SW-274 JK-144 BOARD BOARD FJ-19 BOARD CN203 M905 TRAY TRAY OPEN 2 TRAY CLOSE 1 TK-37 CN502 POWER 5W 9 SW 5V 8 UNSW 5V 7 GN0 6 SIRCS IN (*) 5 GN0 4 GN0 3 GN0 2 BUZZER 1 **BOARD** CN201 CN501 9 AÐ 00 8 SW 5V 7 UNSW 5V 6 GNÐ 5 SIRCS OUT 4 GNÐ 8 FRAM GND 7 UNSW GND 6 UNSW 6V 5 RESET 4 MDDE SI 3 MODE CS TRY 2 MODE SO 1 MODE SCK FRAM GND UNSW GND UNSW 6V RESET FL-69 BOARD UNSW GND UNSW 6V (MODE CS TRY 5 MODE SI 4 RESET 3 TRAY MODE SI MODE CS TRY MODE SO MODE SCK MOĐE SCK 1 2 GND 1 BUZZEER 4-1 4-2

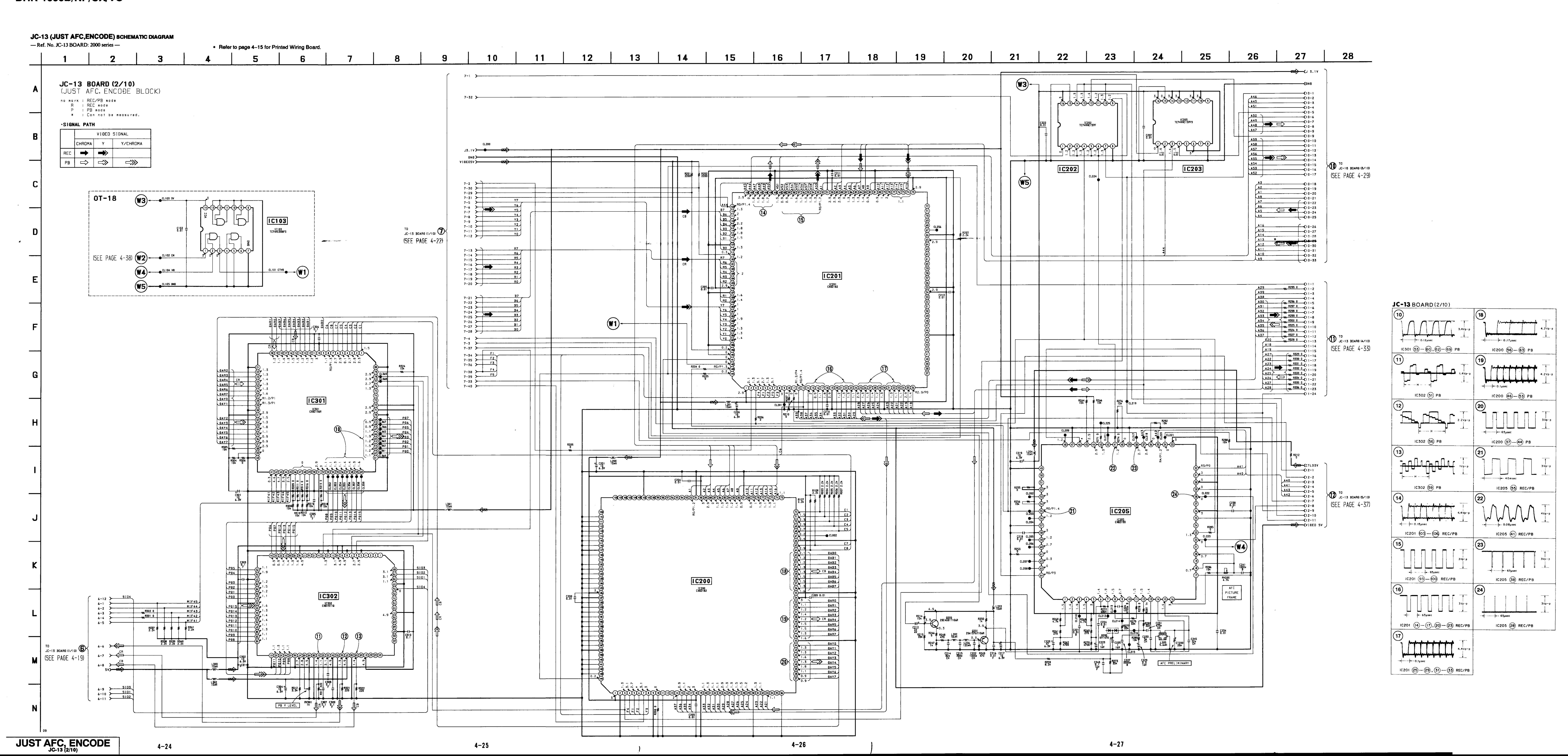


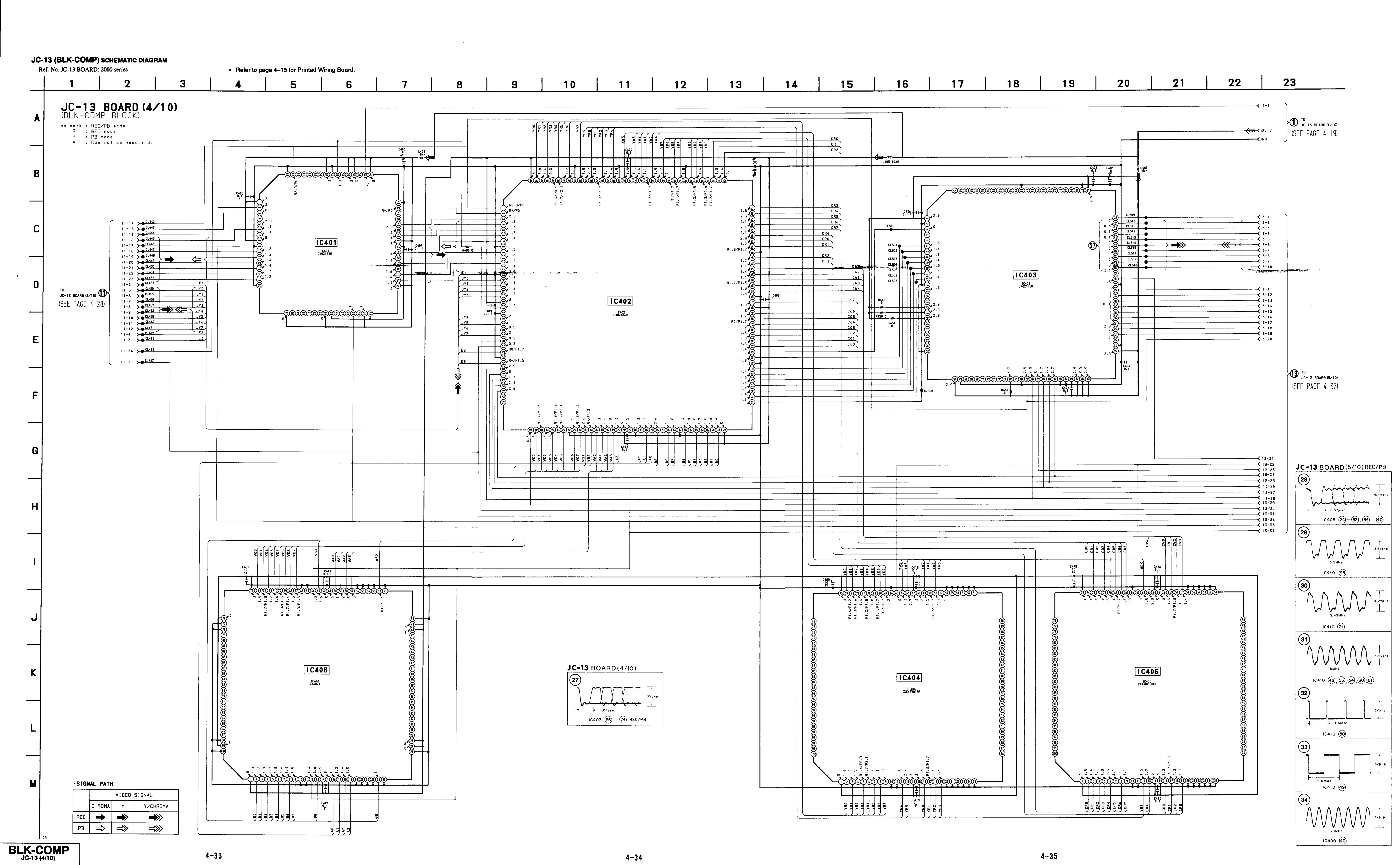
4-15




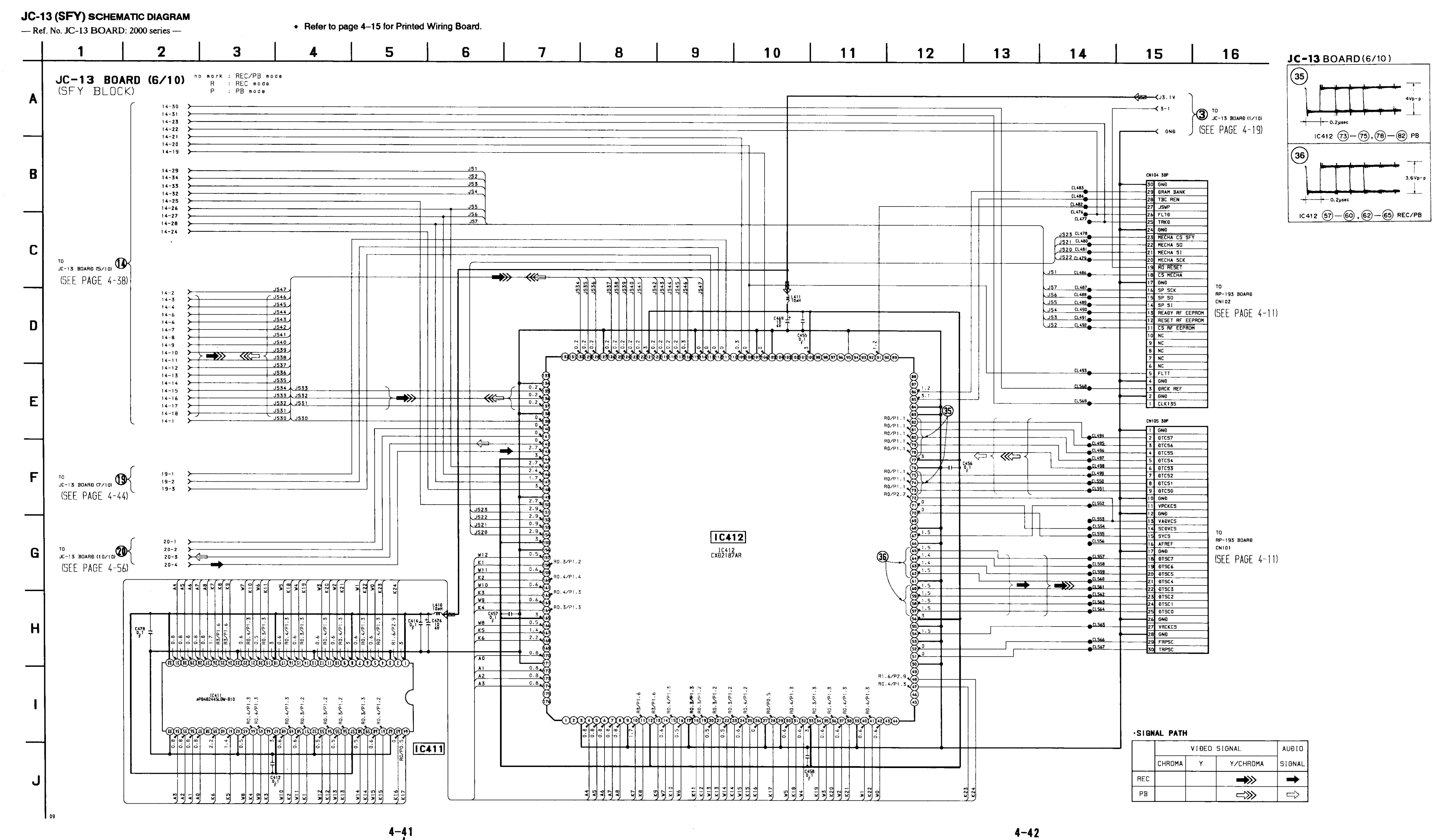










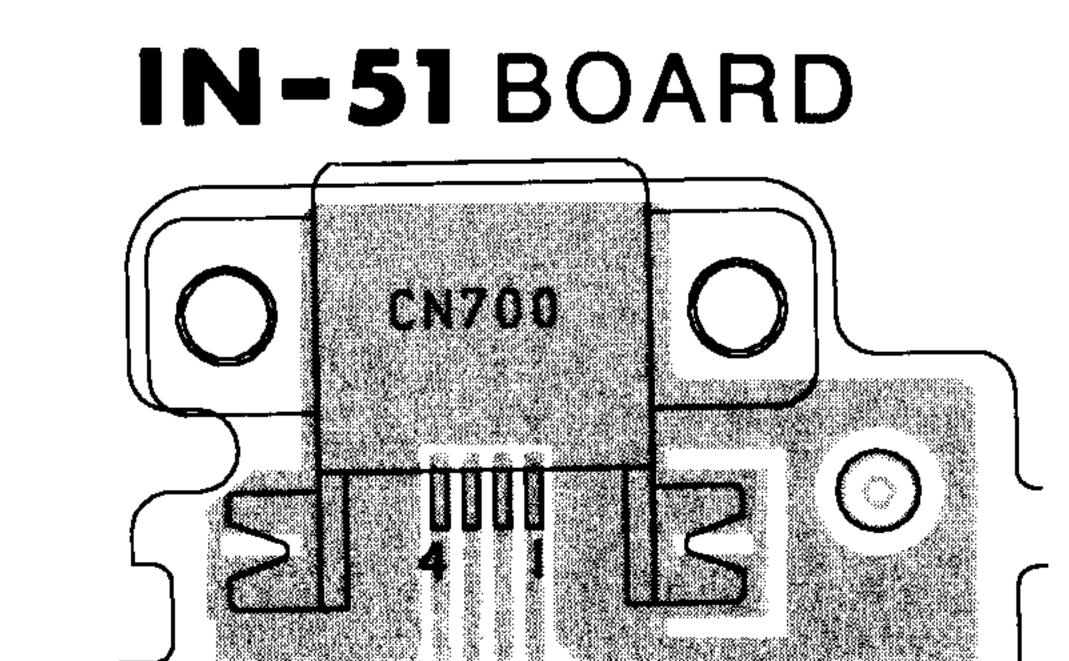


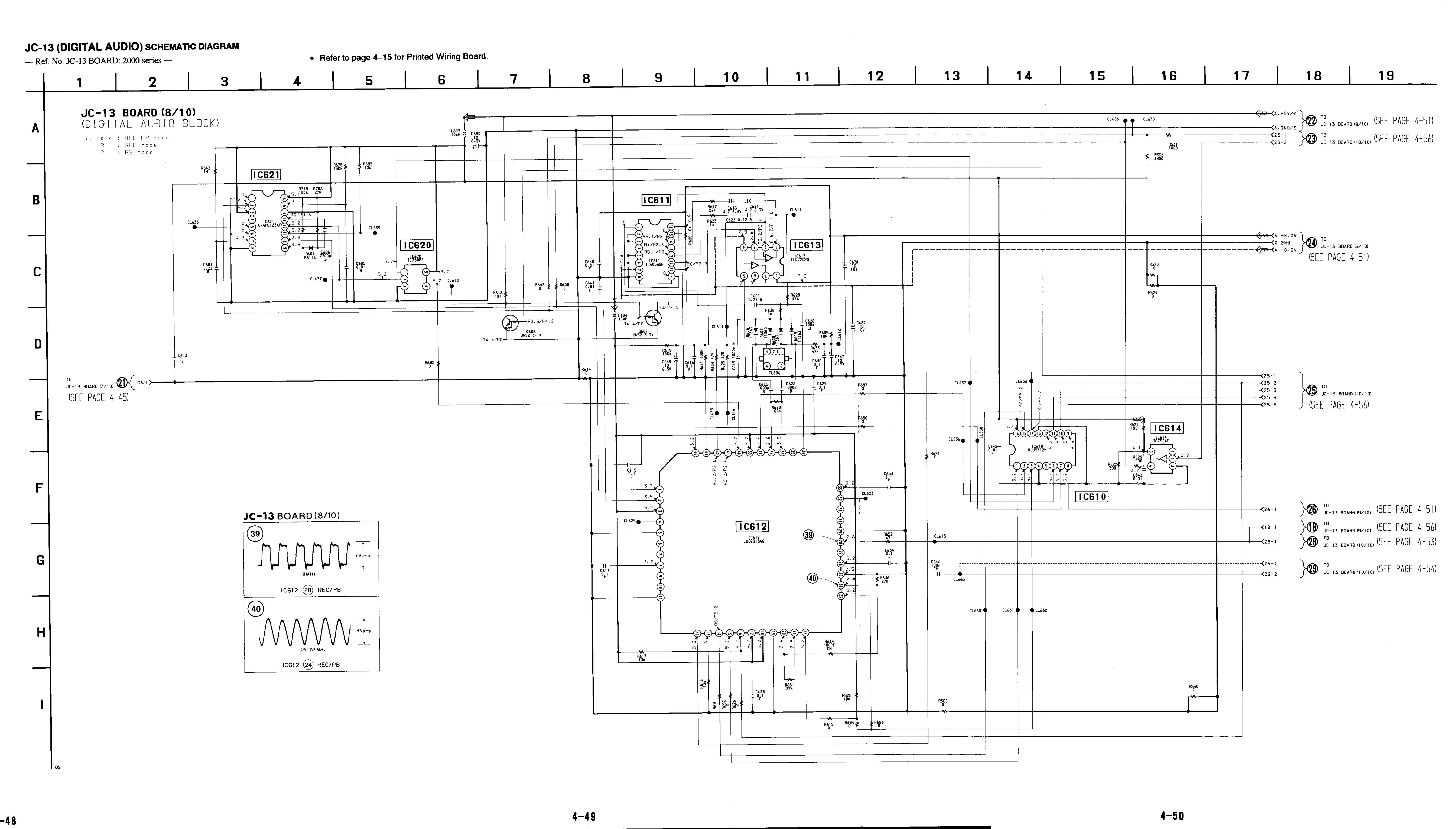
4-43

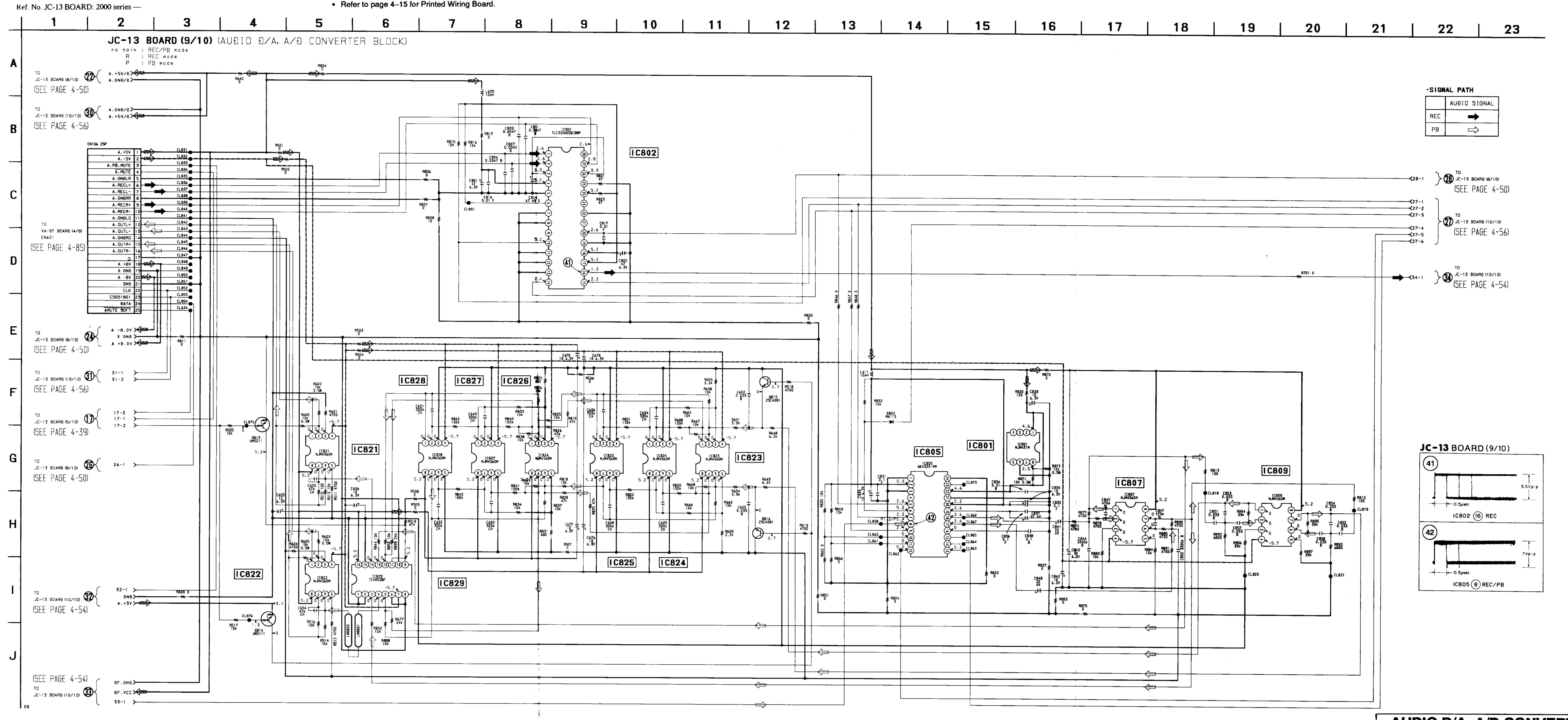
IN-51 (DV IN/OUT) PRINTED WIRING BOARD

--- Ref. No. IN-51 BOARD: 1000 series ---

4-45

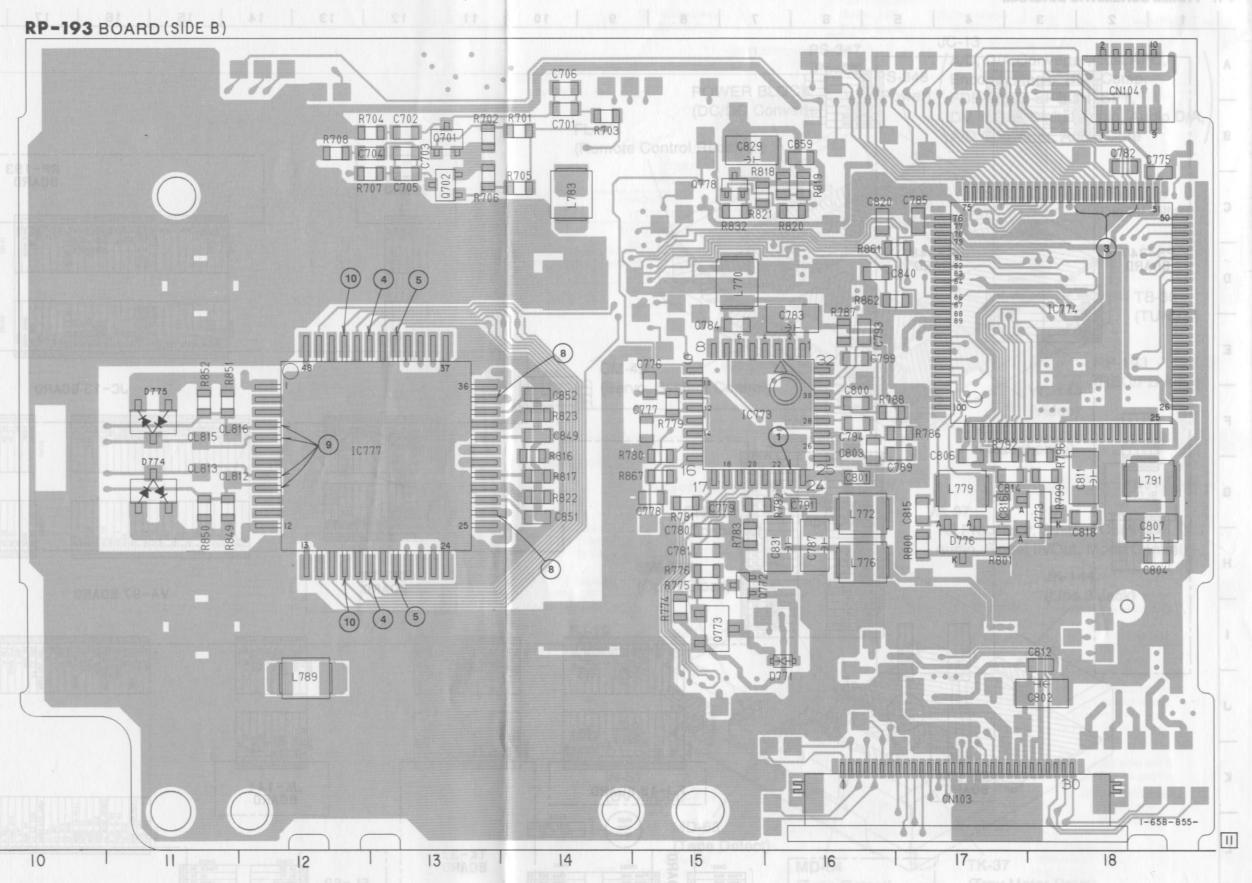


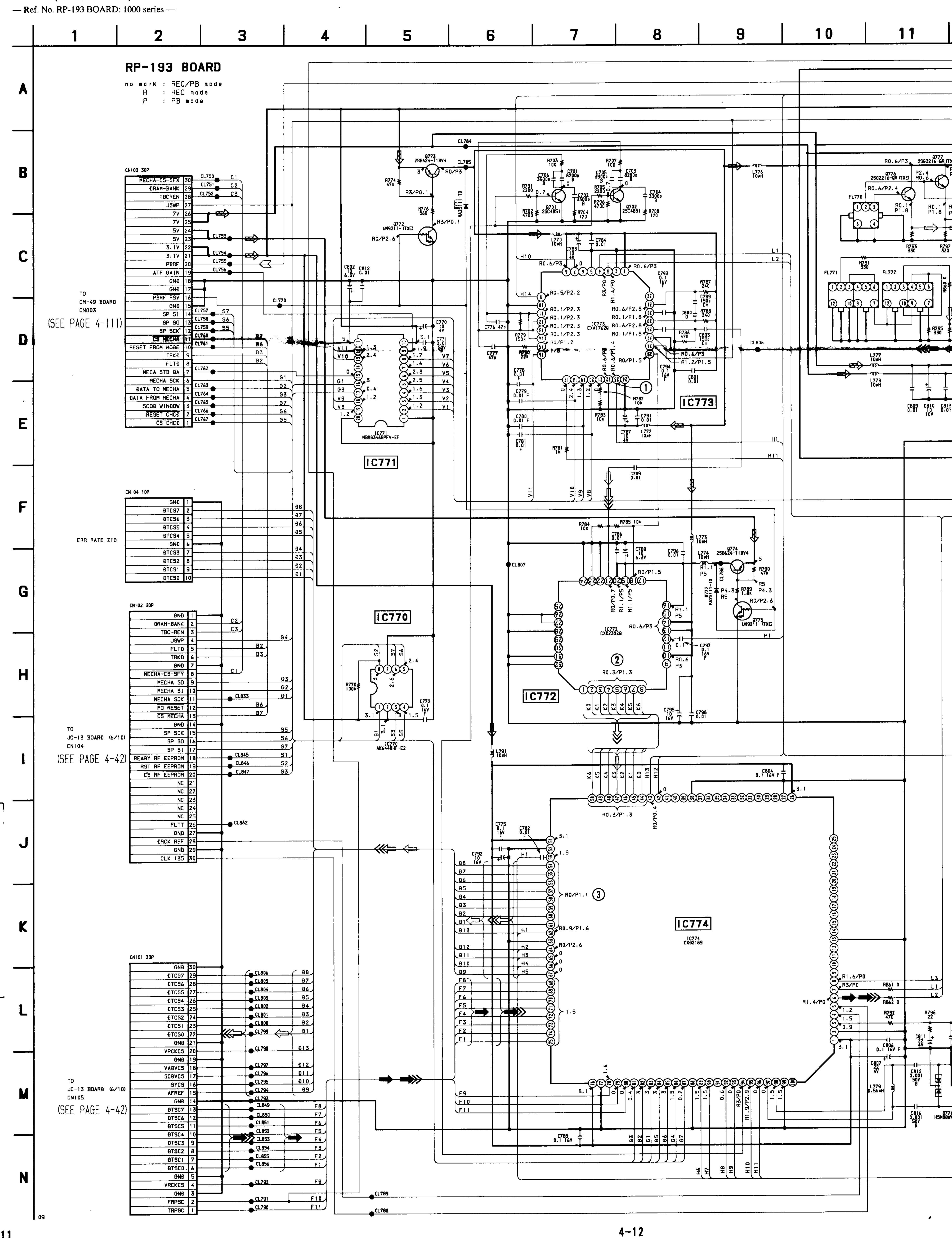


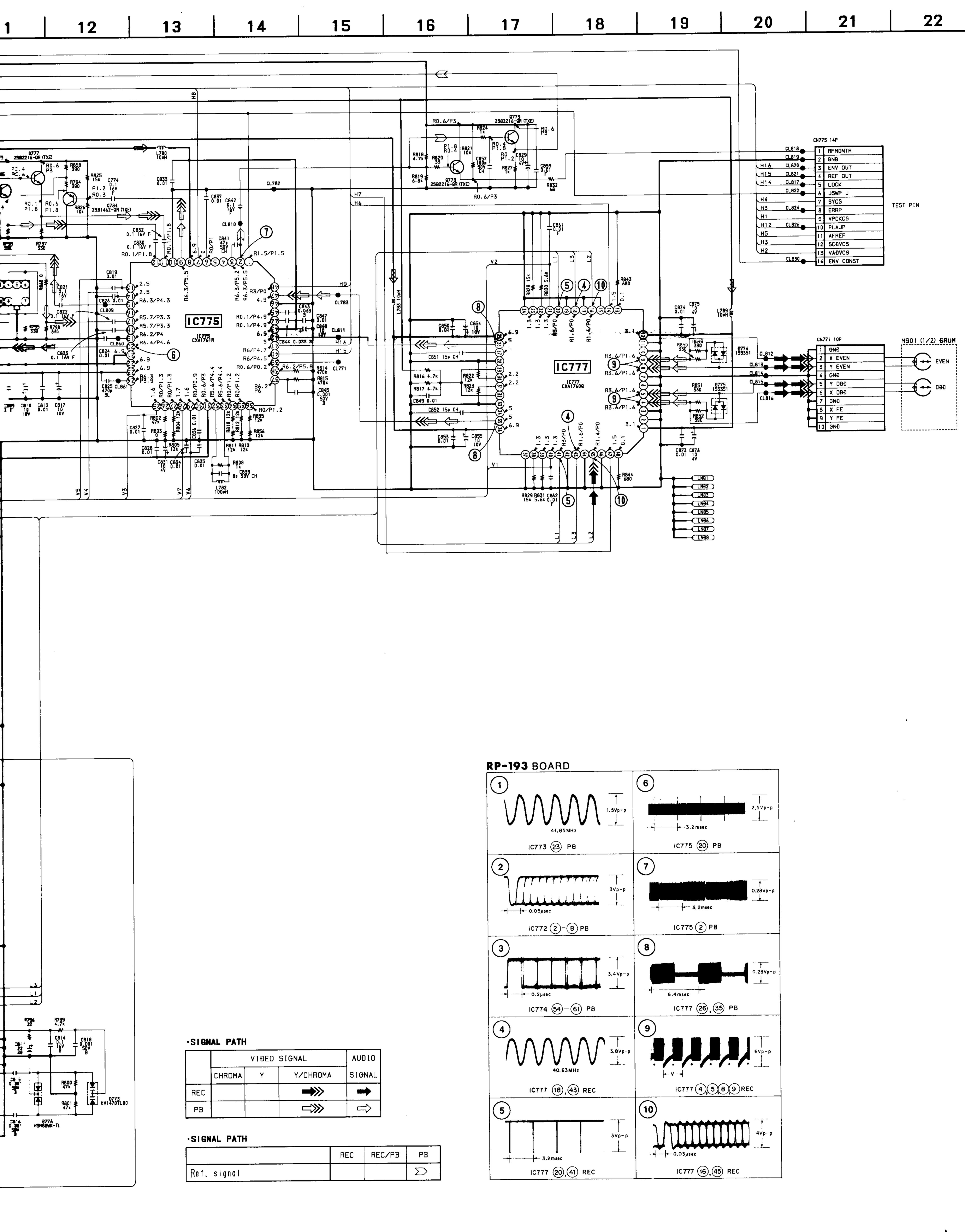


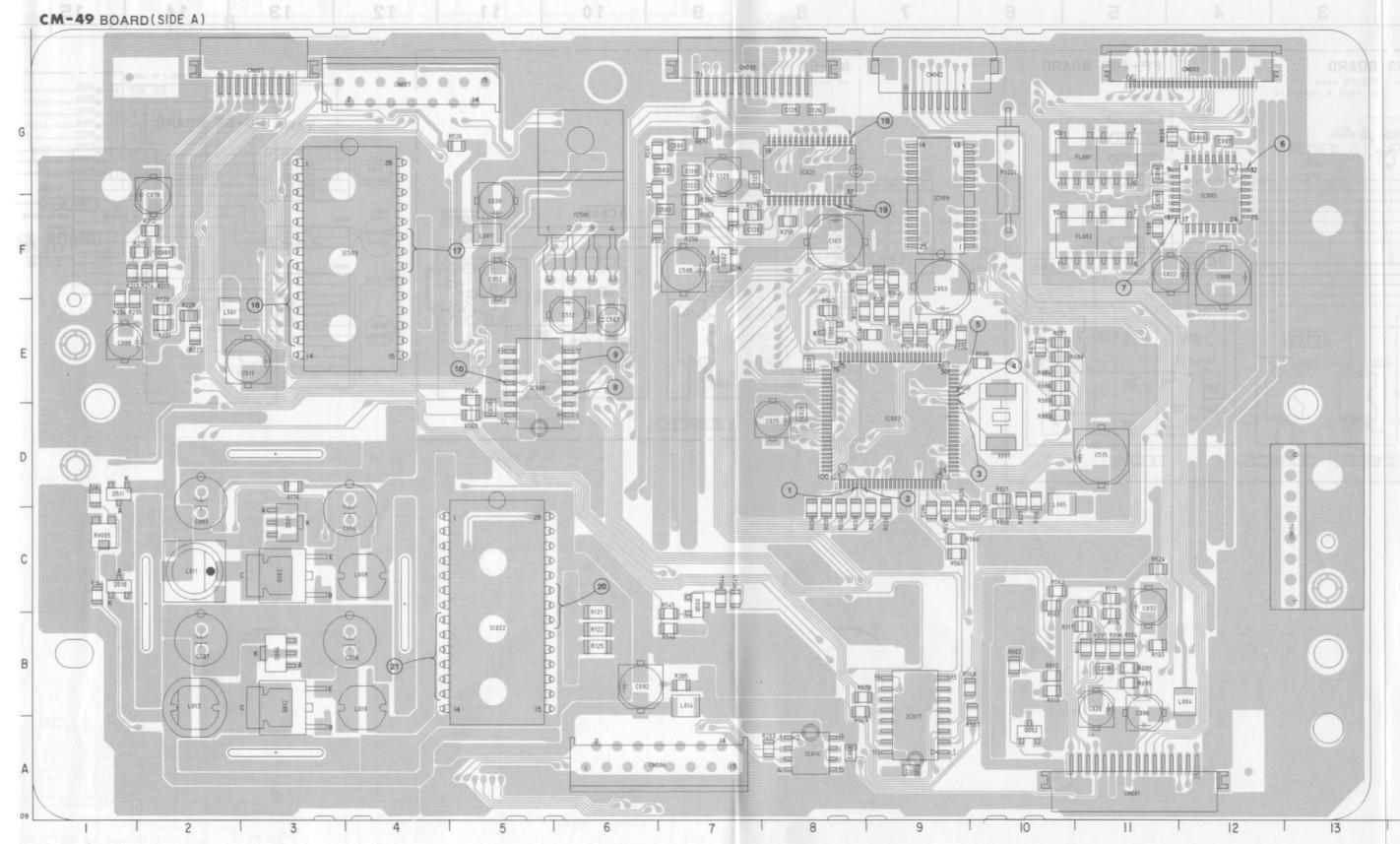
4 - 51

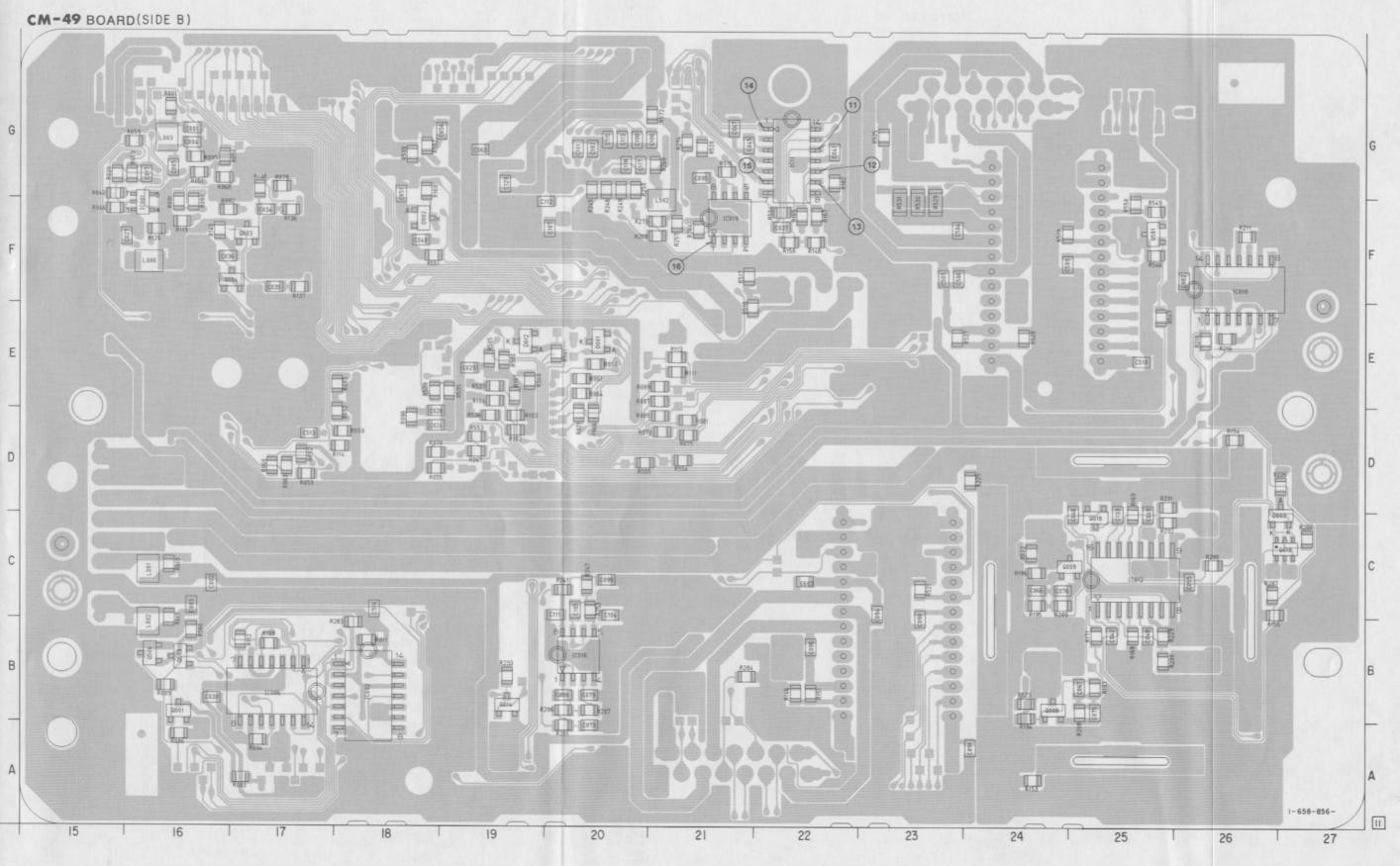
· For printed wiring boards. · Chip transistor There are few cases that the part isn't mounted in this model is RP-193 (REC/PB AMP) PRINTED WIRING BOARD · This board is six-layer print board. However, the patterns printed on this diagram of layers 2 to 5 have not been included in the diagram. - Ref. No. RP-193 BOARD: 1000 series -RP-193 BOARD RP-193 BOARD (SIDE A) CN101 CN102 CN103 CN104 CN771 CN775 D771 D772 D773 D774 D775 D776 F-3 F-6 A-17 F-18 D-8 F-8 B-16 F-2 C-17 C-11 D-11 C-17 F IC770 IC771 IC772 IC773 IC774 IC775 IC777 C-1 B-4 E-1 D-15 E-18 D-4 D-12 0 0 Q701 Q702 Q772 Q773 Q774 Q775 Q776 Q777 Q778 Q779 Q784 F-13 F-13 B-15 B-15 F-1 F-2 E-3 E-4 F-15 F-4 0 0 E 100 D 0 C845 IC770 R805 | | | В A 5 3 4




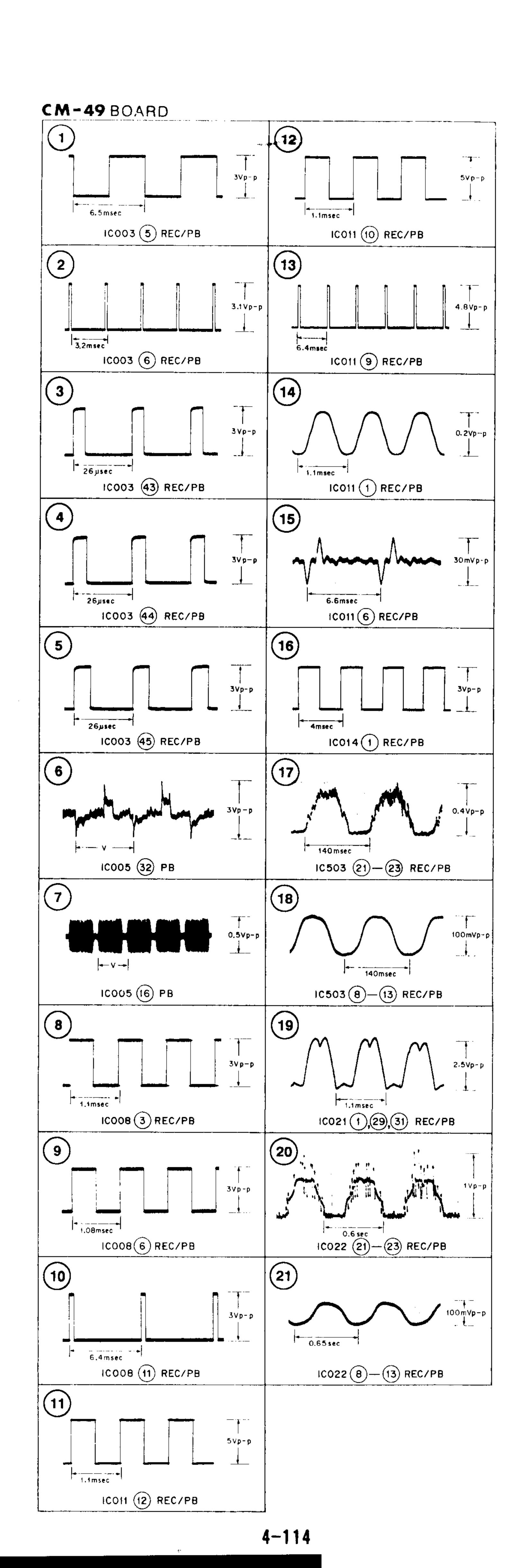












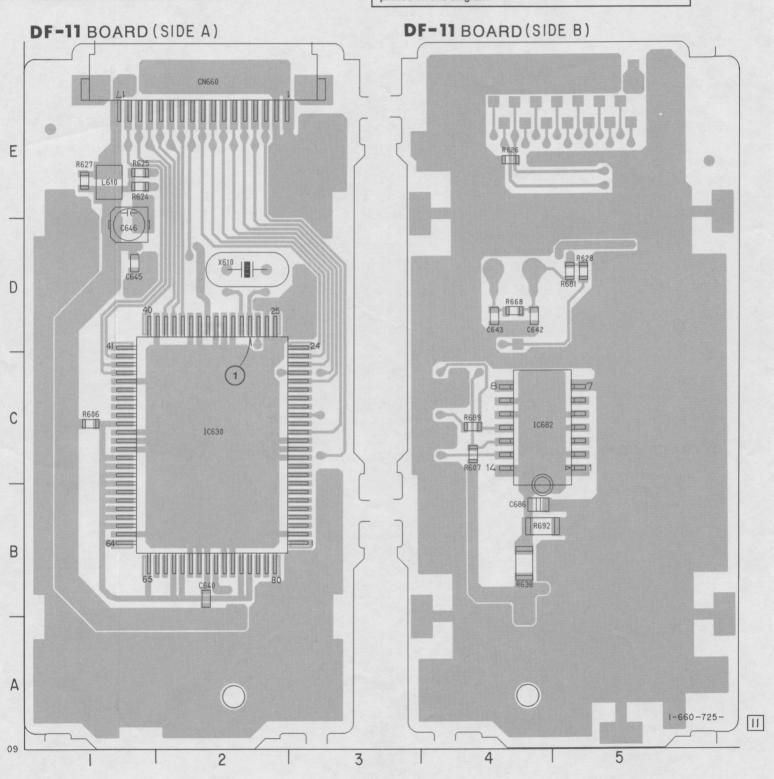
DHR-1000B/NP/UX/VC

DF-11 (DIGITAL FILTER) PRINTED WIRING BOARD

- Ref. No. DF-11 BOARD: 1000 series -

• For printed wiring boards.

There are few cases that the part isn't mounted in this model is printed on this diagram.



DF-11 (DIGITAL FILTER) SCHEMATIC DIAGRAM

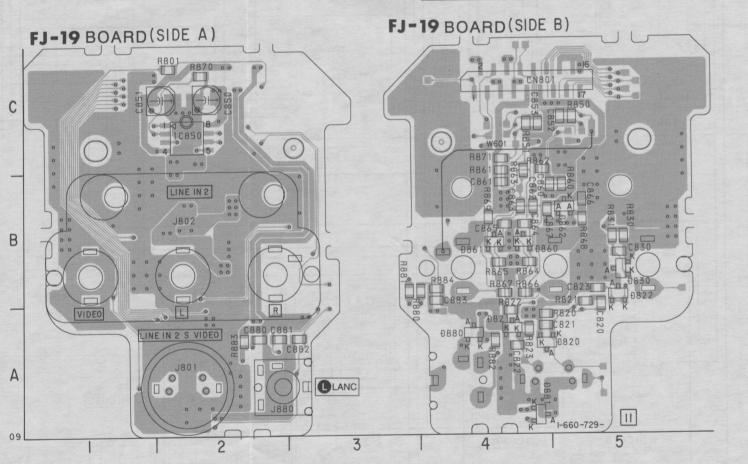
DF-11 (DIGITAL FILTER) SCHEMATIC DIAGRAM

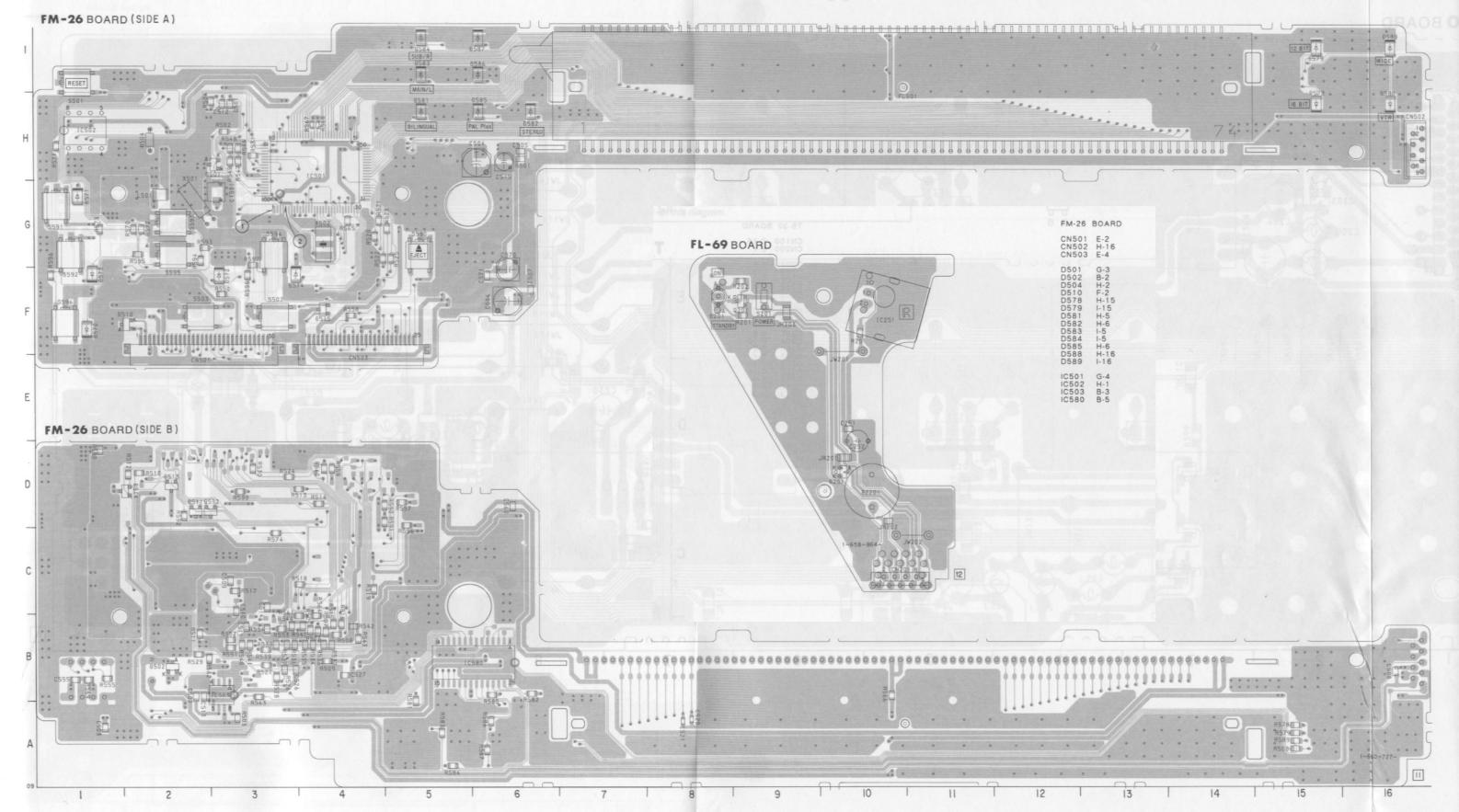
FJ-19 (LINE 2 JACK) PRINTED WIRING BOARD

- Ref. No. FJ-19 BOARD: 5000 series -

- For printed wiring boards.
- O : Through hole.

There are few cases that the part isn't mounted in this model is printed on this diagram.





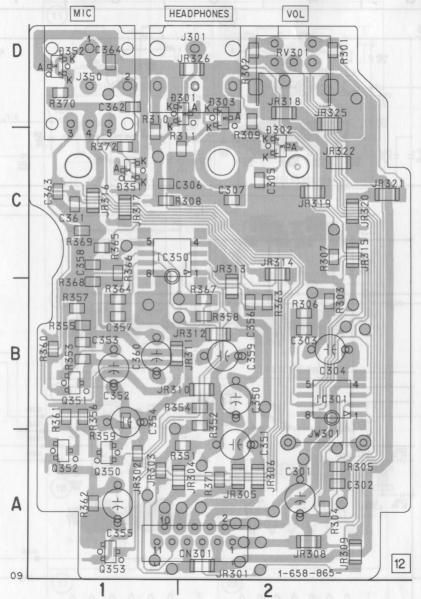
4-130

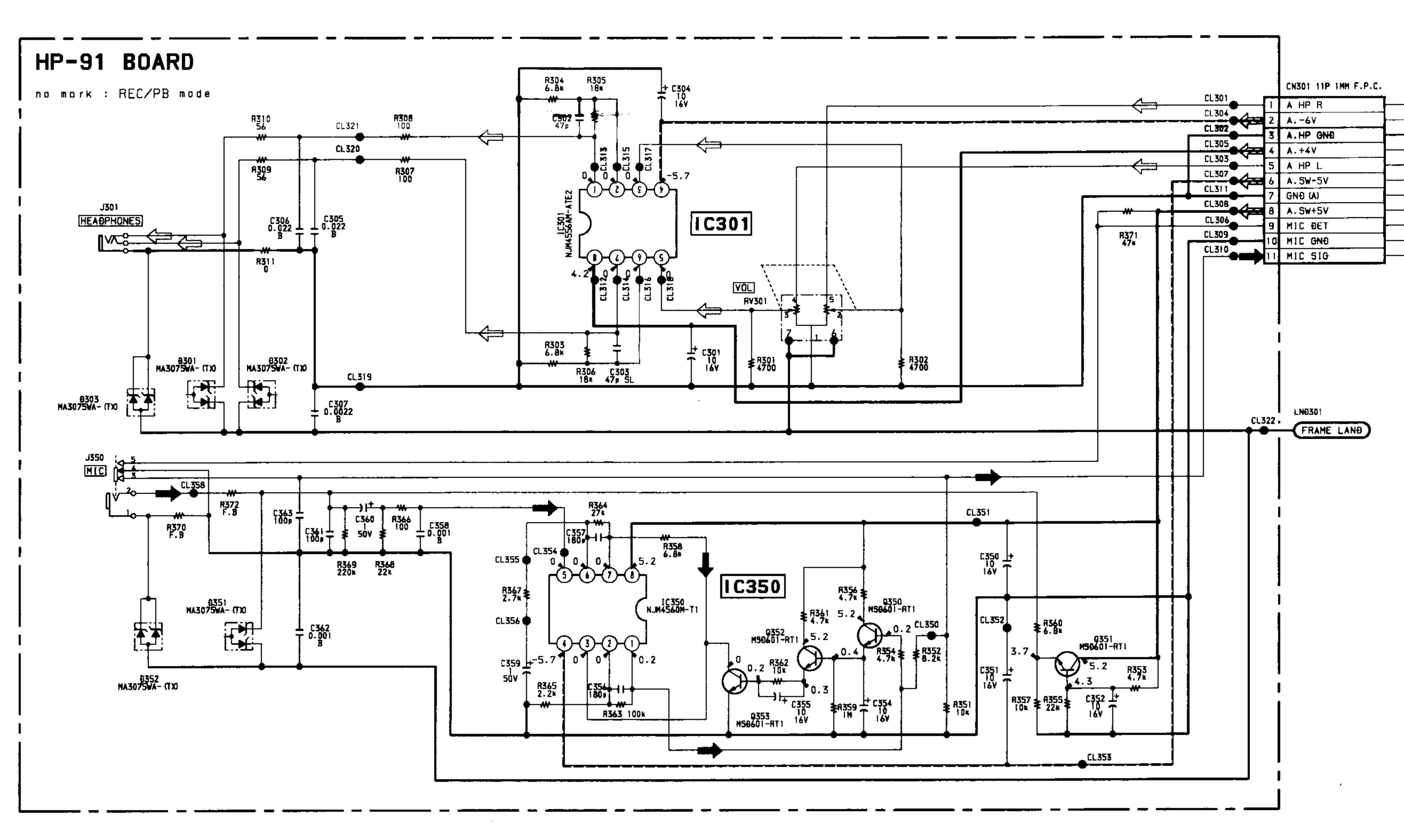
HP-91 (HEADPHONES) PRINTED WIRING BOARD

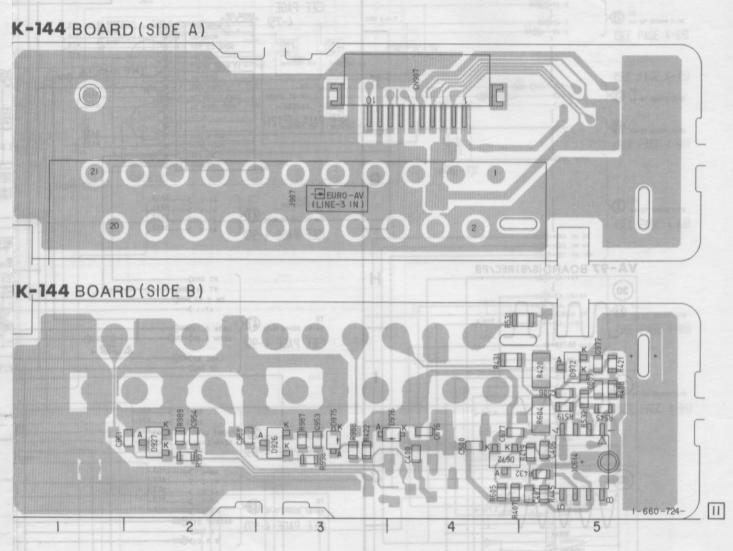
- Ref. No. HI-91 BOARD: 5000 series -

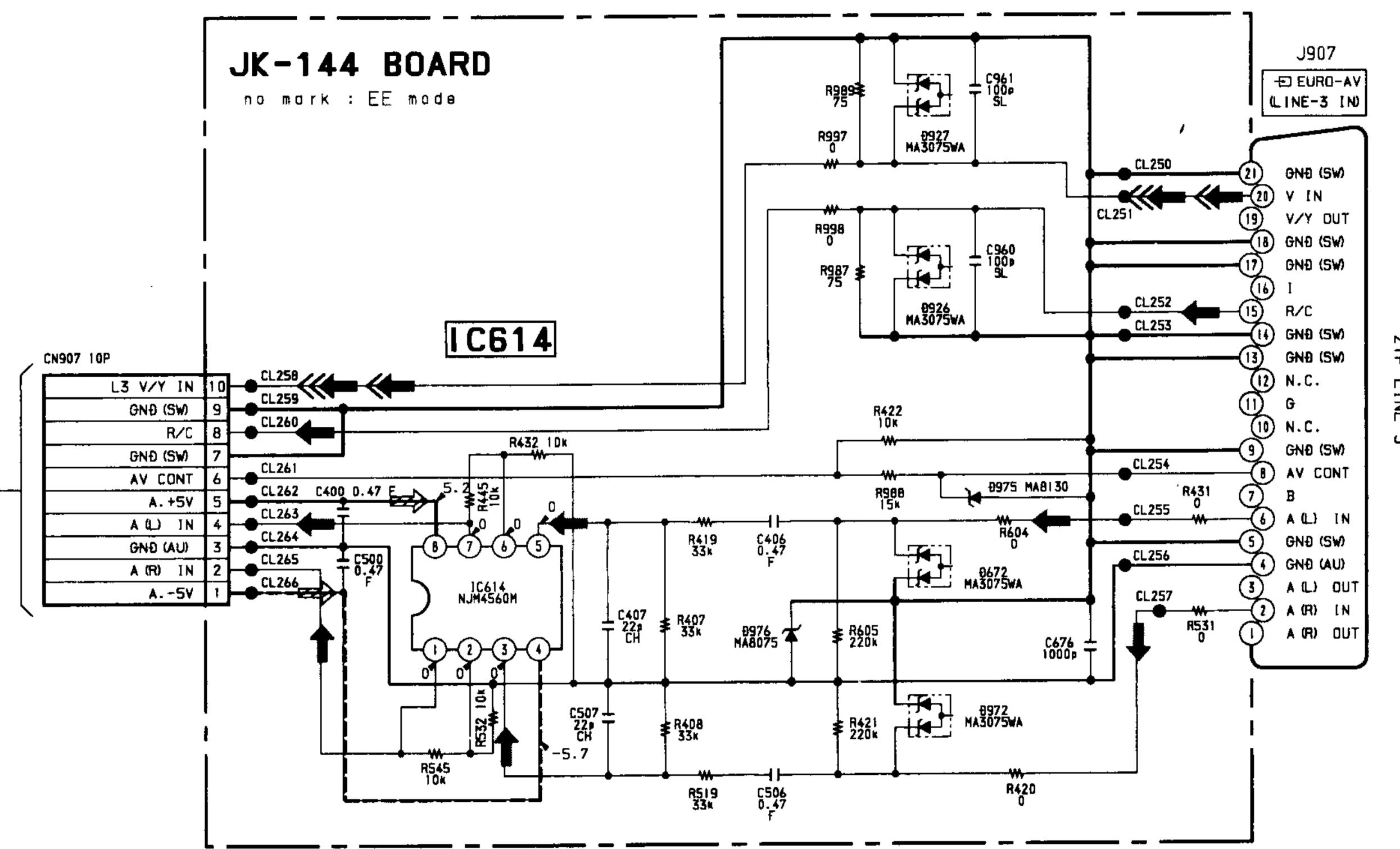
There are fe printed on the

HP-91 BOARD

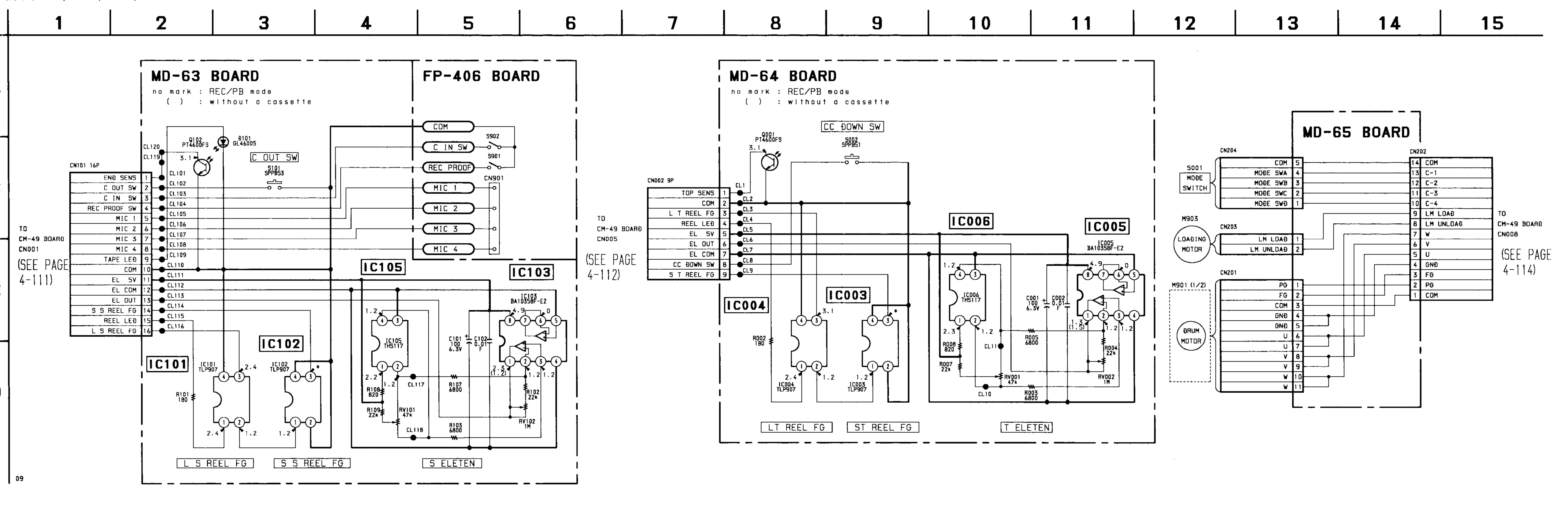


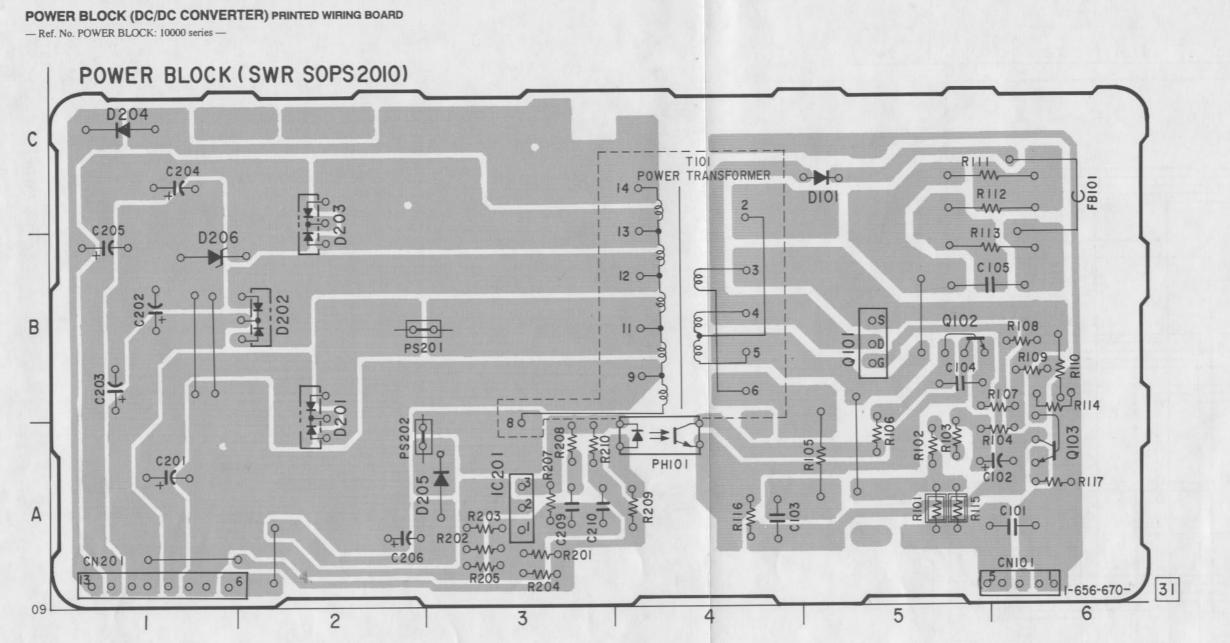






MD-63, MD-64, MD-65 (TAPE DETECT), FP-406 (TAPE SENSOR) PRINTED WIRING BOARDS - Ref. No. MD-63, MD-64, MD-65, FP-406 BOARDS: 7000 series -MD-64BOARD MD-65BOARD 0 0 MD-63 BOARD 0 FP-406 BOARD S 90 I REC PROOF 0 S101 C OUT SW FP-406 1-658-990-11 AMR 9 16 1-658-990-Termin 1-658-991-



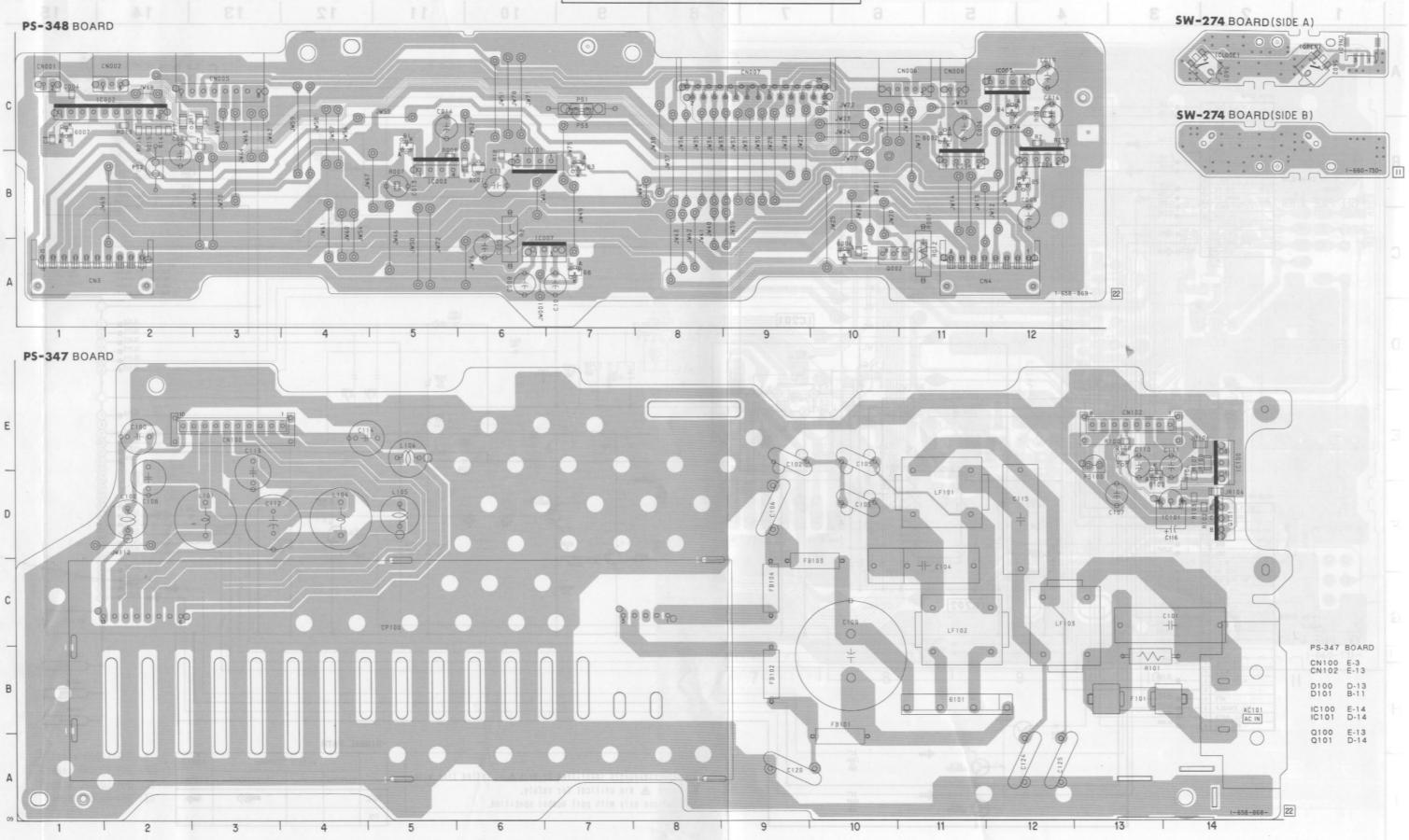


POWER BLOCK

CN101 A-6 CN201 A-1 D101 C-5 D201 A-2 D202 B-2 D203 C-2 D205 A-3 D206 B-1

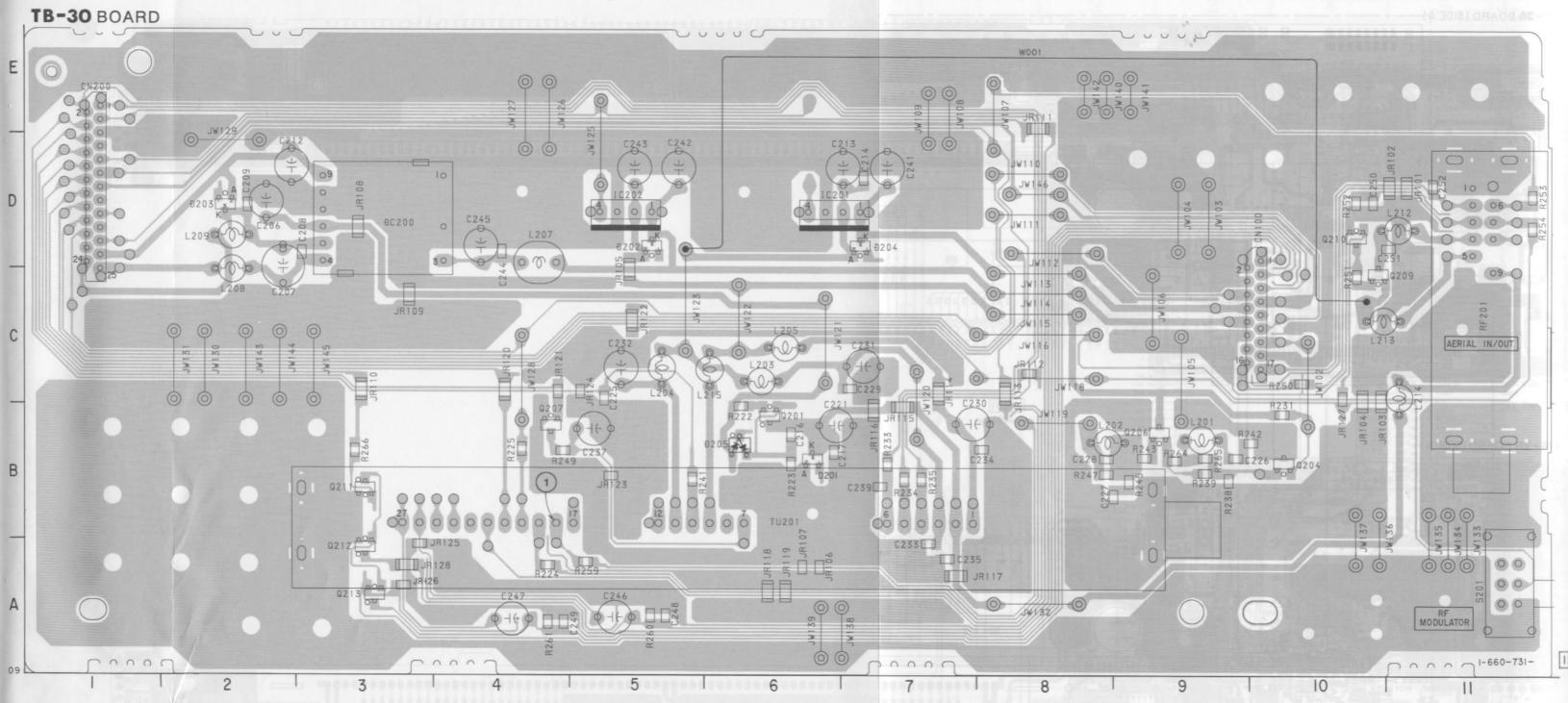
> B-5 B-5 A-6

Q101 Q102 Q103



PS-347, PS-348 (POWER), SW-274 (OPEN/CLOSE) SCHEMATIC DIAGRAMS --- Ref. No. PS-347, PS-348, SW-274 BOARDS: 9000 series ---PS-348 BOARD PS-347 BOARD no mark : EE made See page 4-149 shows the internal circuit of the ± 0.000 converter. The components identified by mark 🛧 or dotted line with mark 🛕 are critical for safety. SW-274 BOARD Replace only with part number specified.

4-145



0 UN2225T

The components identified by mark 🛧 or dotted line with

mark 🛕 are critical for safety.

Replace only with part number specified.

VIĐEO SIGNAL

Y/CHROMA

->>>>

SIGNAL

CHROMA

NP: DHR-1000NP mode!

VC: DHR-1000VC model,

UX: DHR-1000UX mode!

TK-37 (TRAY MOTOR DRIVE), CN-93 (CONNECTOR) SCHEMATIC DIAGRAMS --- Ref. No. TK-37, CN-93 BOARDS: 5000 series ---CN201 8P 1.25MM F.P.C. CN502 BP 2MM CN501 8P 1.25MM F.P.C. TK-37 BOARD MOĐE SCK CL202_ CL503_ MOĐE SO MOĐE SO CL505_ MOĐE CS TRY MDDE CS TRY no mark : EE mode MOĐE CS TRY CL507 **TRAY** 4 MOĐE 51 MOĐE SI MOĐE SI CL205_ CL509 RESET CL511 UNSW 6V UNSW 6V CL513 UNSW GND UNSW GND 2 UNSW GND S201 B FRAME GND FRAME GND 8 FRAME GNĐ LN0502 \ OPEN/CLOSE / FRAME GNĐ LNÐ201 TCL 227 CN-93 BOARD FRAME GND **★** £210 CN202 15P 1.0MM F.P.C. CL210_ IC201 CL212 4 TT MODE RESET CL214 6 UNSW 6V IC201 BA6219B UNSW GND TRY CLOSE SW VA-97 BDARĐ (6/8) TRY OPEN SW CN702 CL218 10 N.C. (SEE PAGE 4-91) CL219 11 N.C. CL220 12 TRY CLOSE CL221 TRY OPEN CL222 14 MT 14V CL223 15 MT GNĐ R202 33 R203 33 R204 33 + W R205 33 C204 0,1 T CN203 2P C203 0.33 F TRY CLOSE CL225_

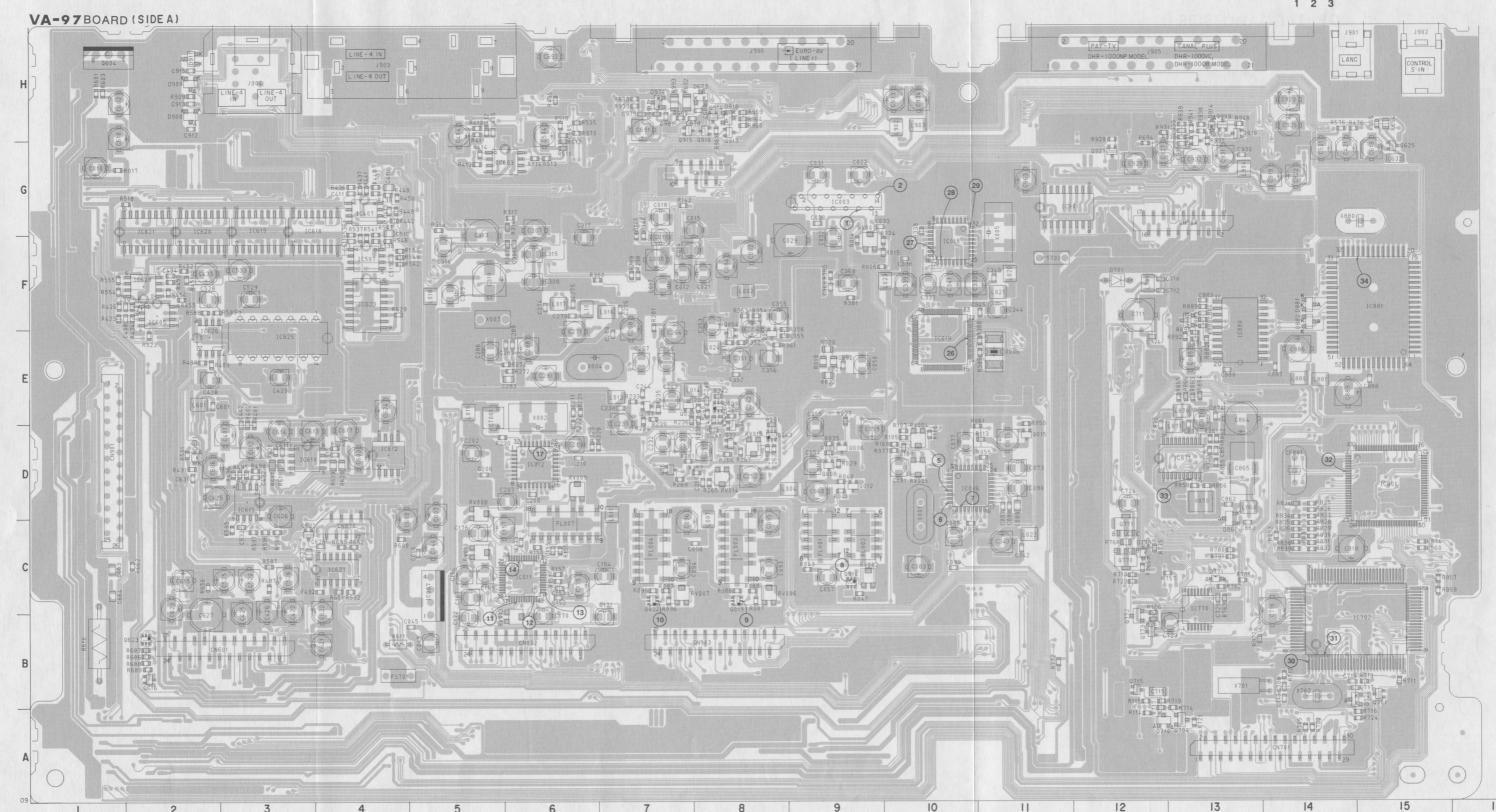
VA-97 (YC PROCESSOR, SYSTEM CONTROL, AUDIO, SIGNAL IN/OUT, MODE CONTROL) PRINTED WIRING BOARD

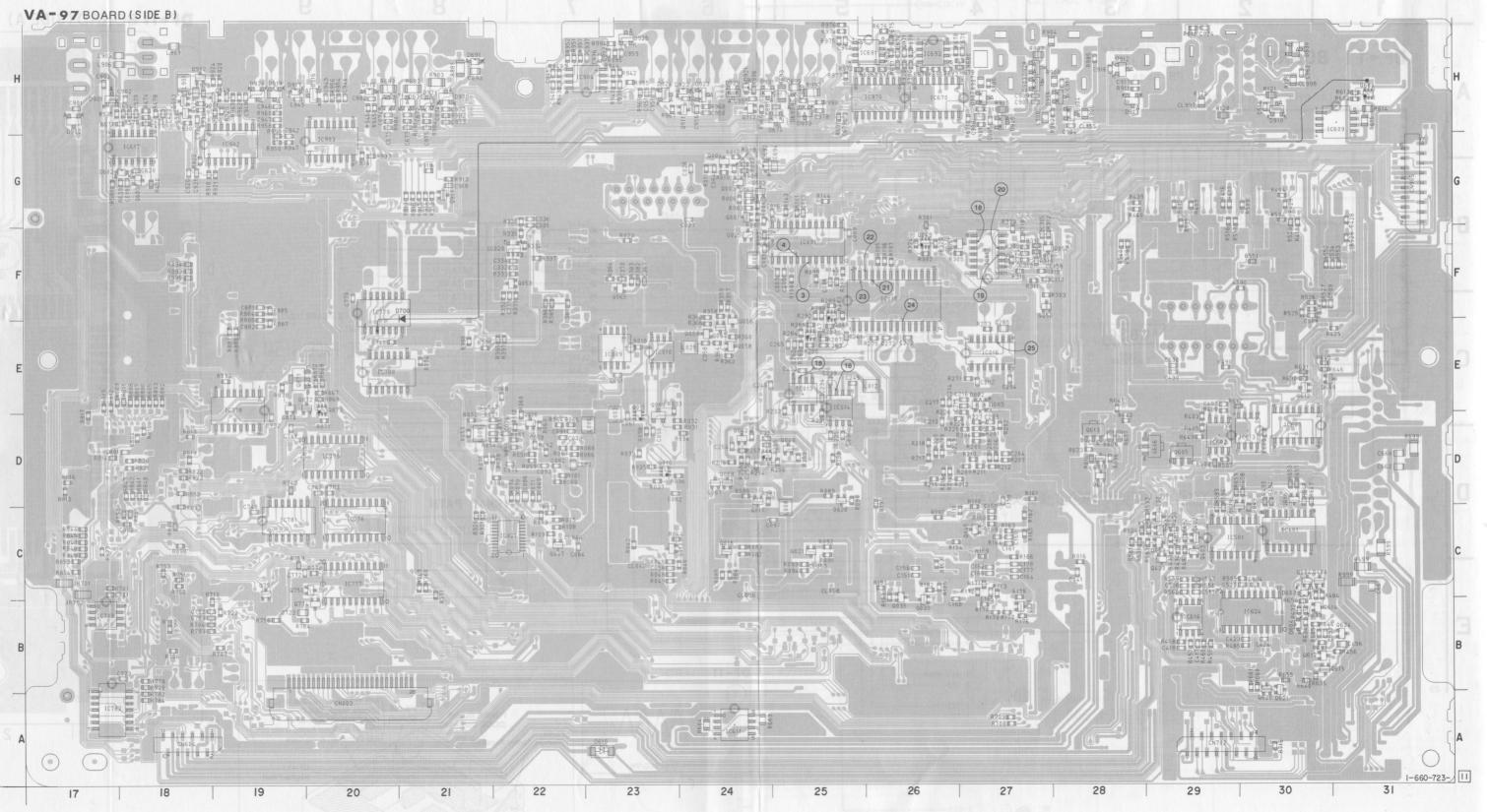
— Ref. No. VA-97 BOARD: 3000 series —

· For printed wiring boards.

 This board is six-layer print board. However, the patterns of layers 2 to 5 have not been included in the diagram. Chip transistor

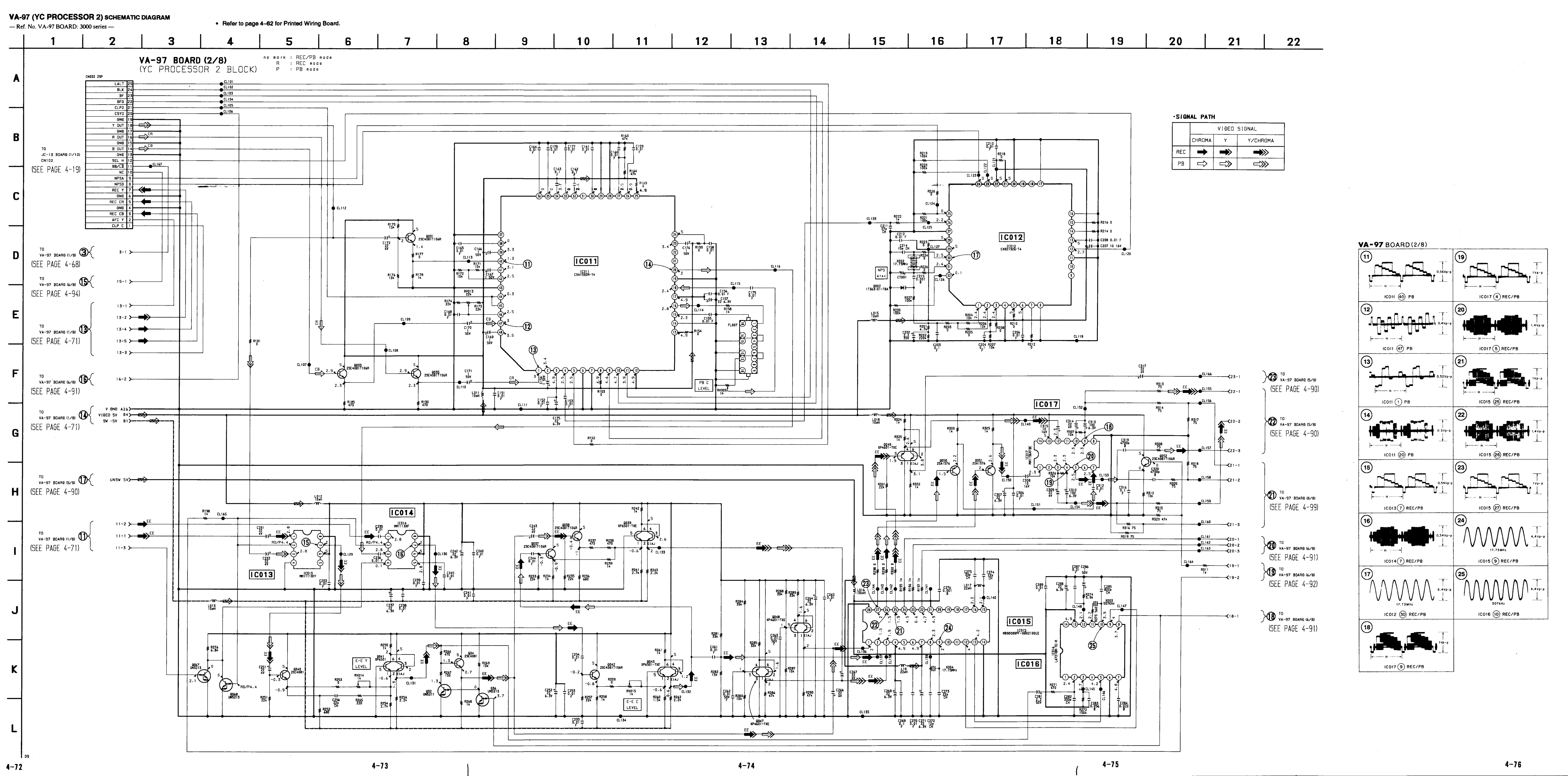
C 6 5 4
Q Q
B E U U U

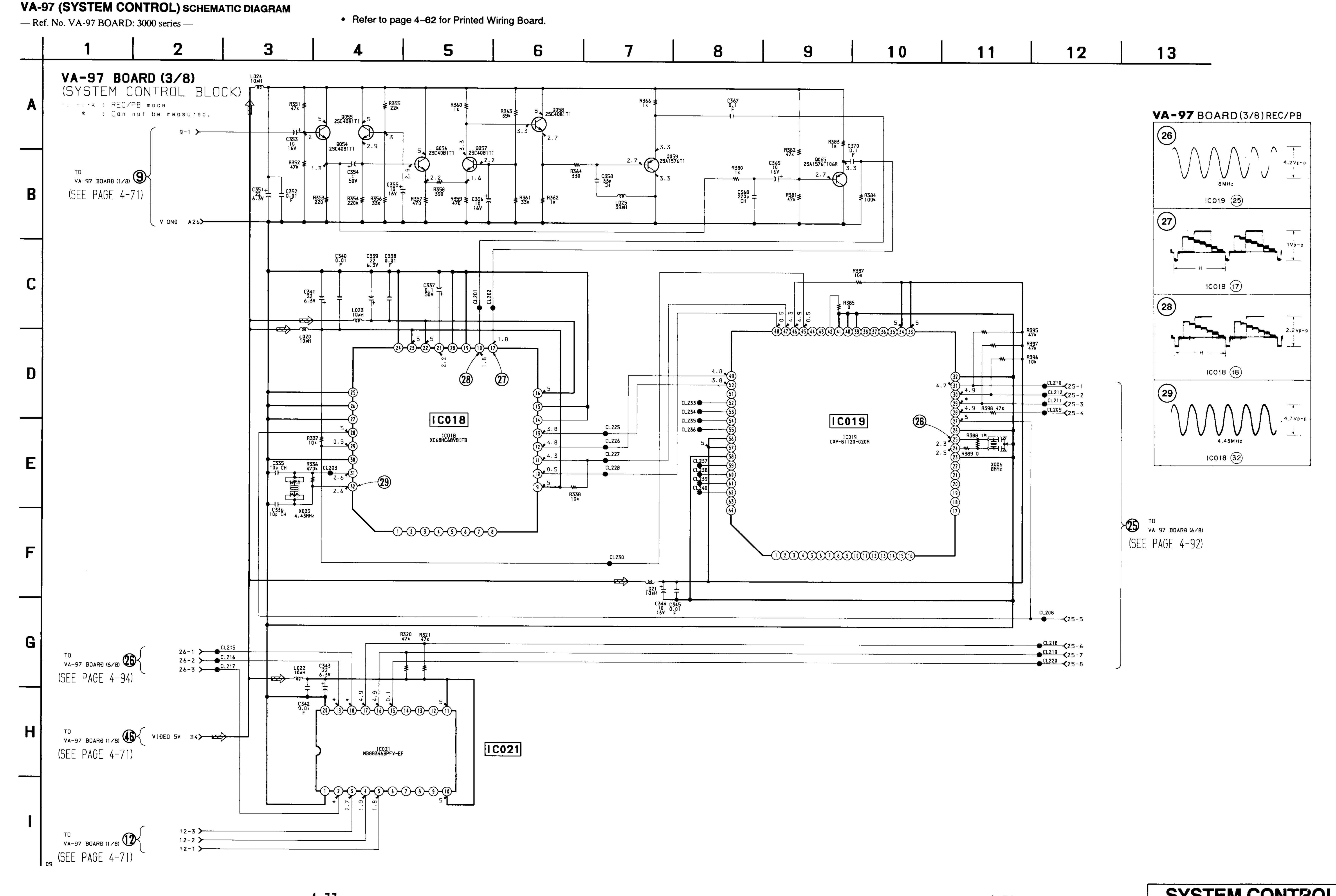





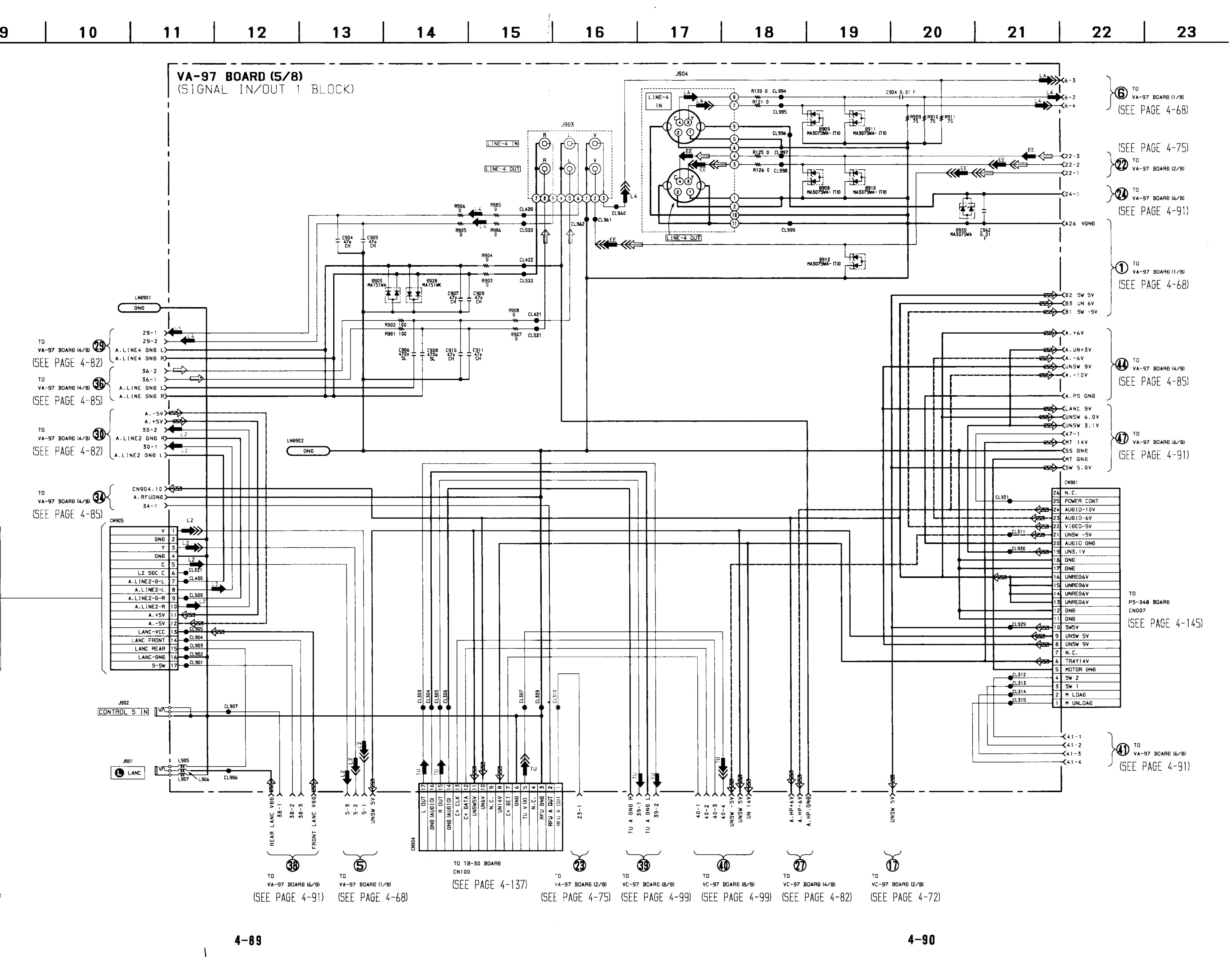
VA-97 B	OARD				
CN003 CN003 CN604 CN701 CN702 CN701 CN702 CN905 CN905 CN905 CN906	O BABAA COB S 7 00011	IC782 IC881 IC881 IC903 IC903 IC903 IC904 IC903 IC904 IC903 IC900	A-1133529036 44 GGDCDDDDCCDDDCCDBDBDCDEE	Q915 Q917	H-7 H-8 G-21
DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD	83000 994443370115 5 0 33	90000000000000000000000000000000000000	8244 8222822222222222222222222222222222		

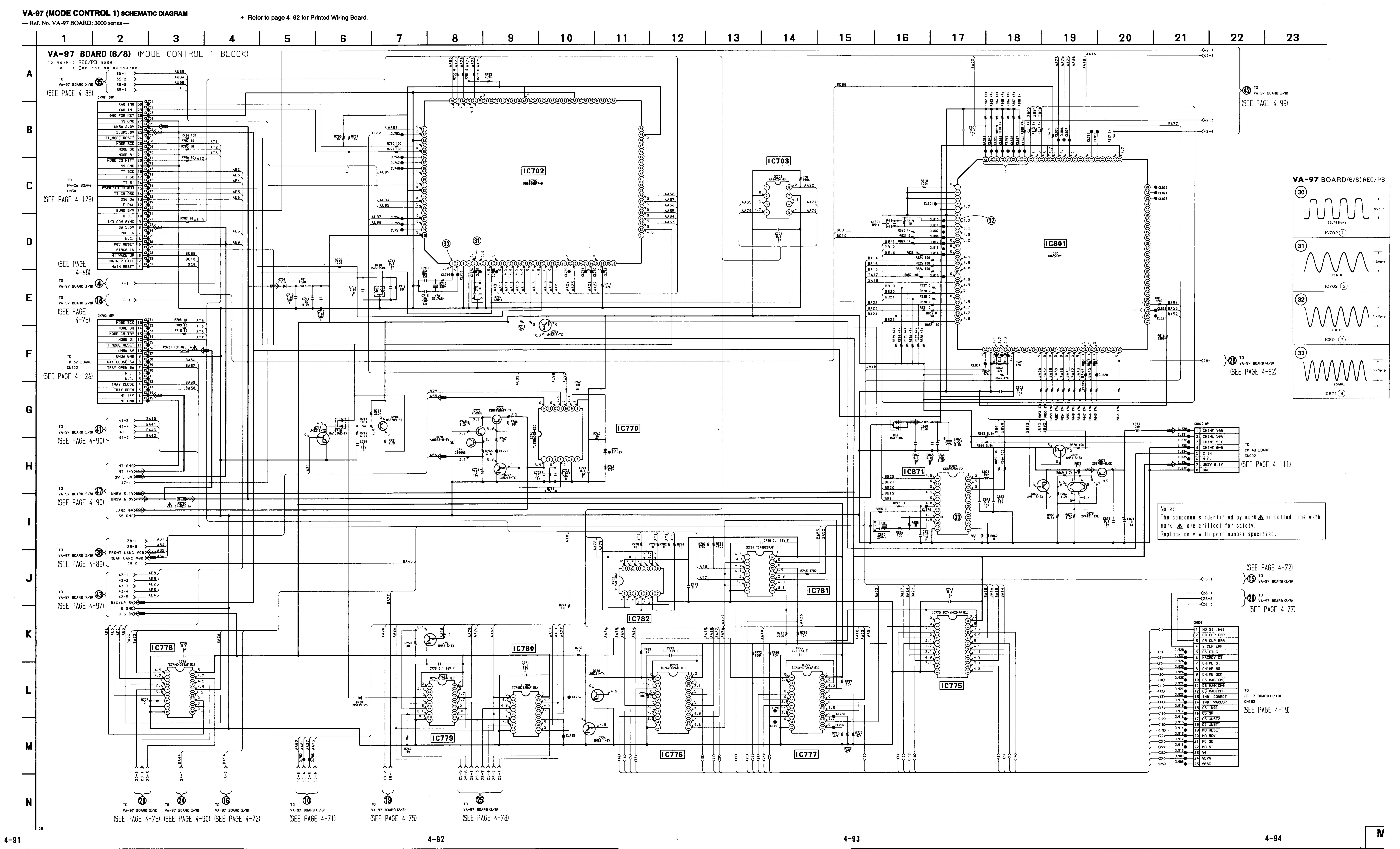
VA-97 BOARD(1/8) REC

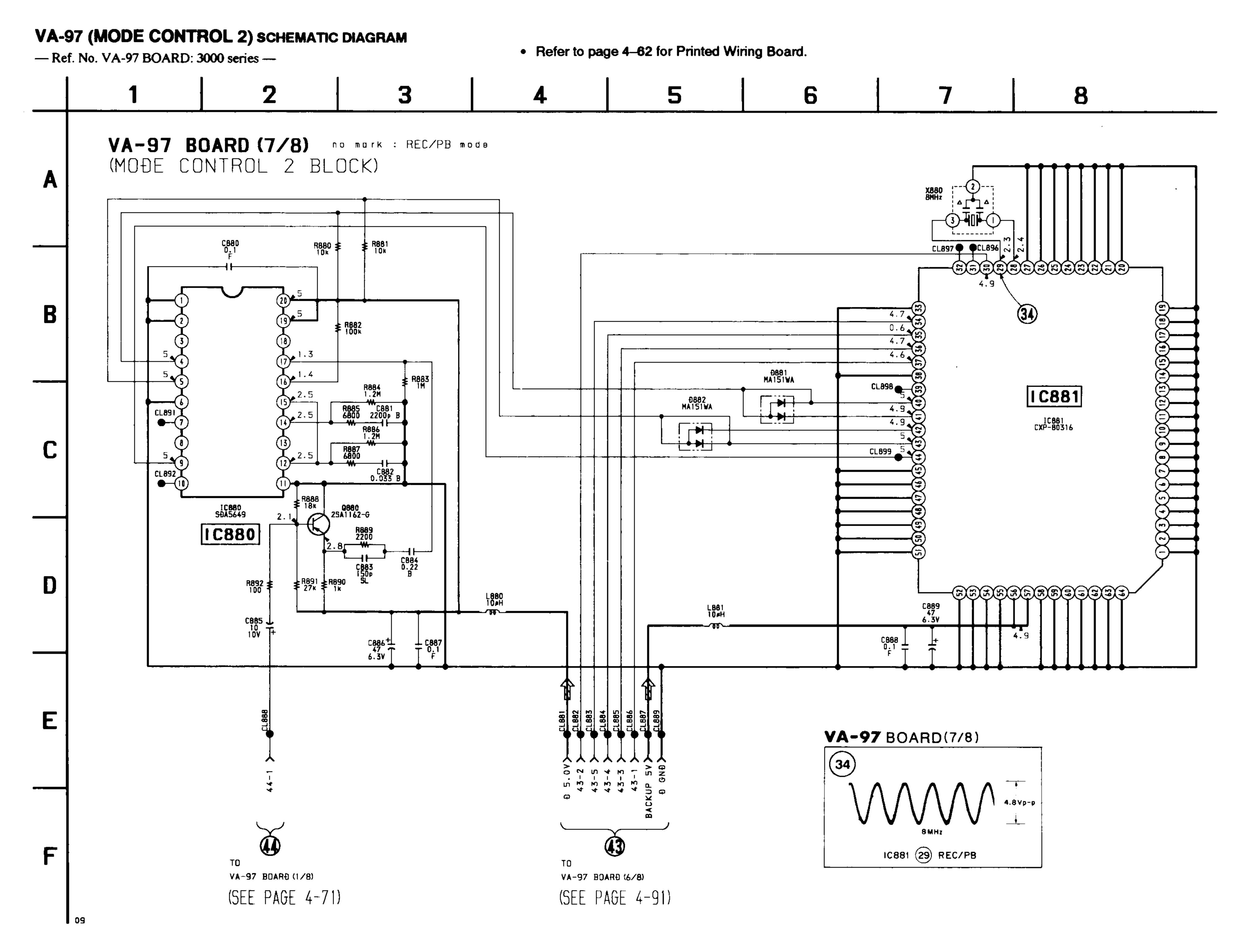


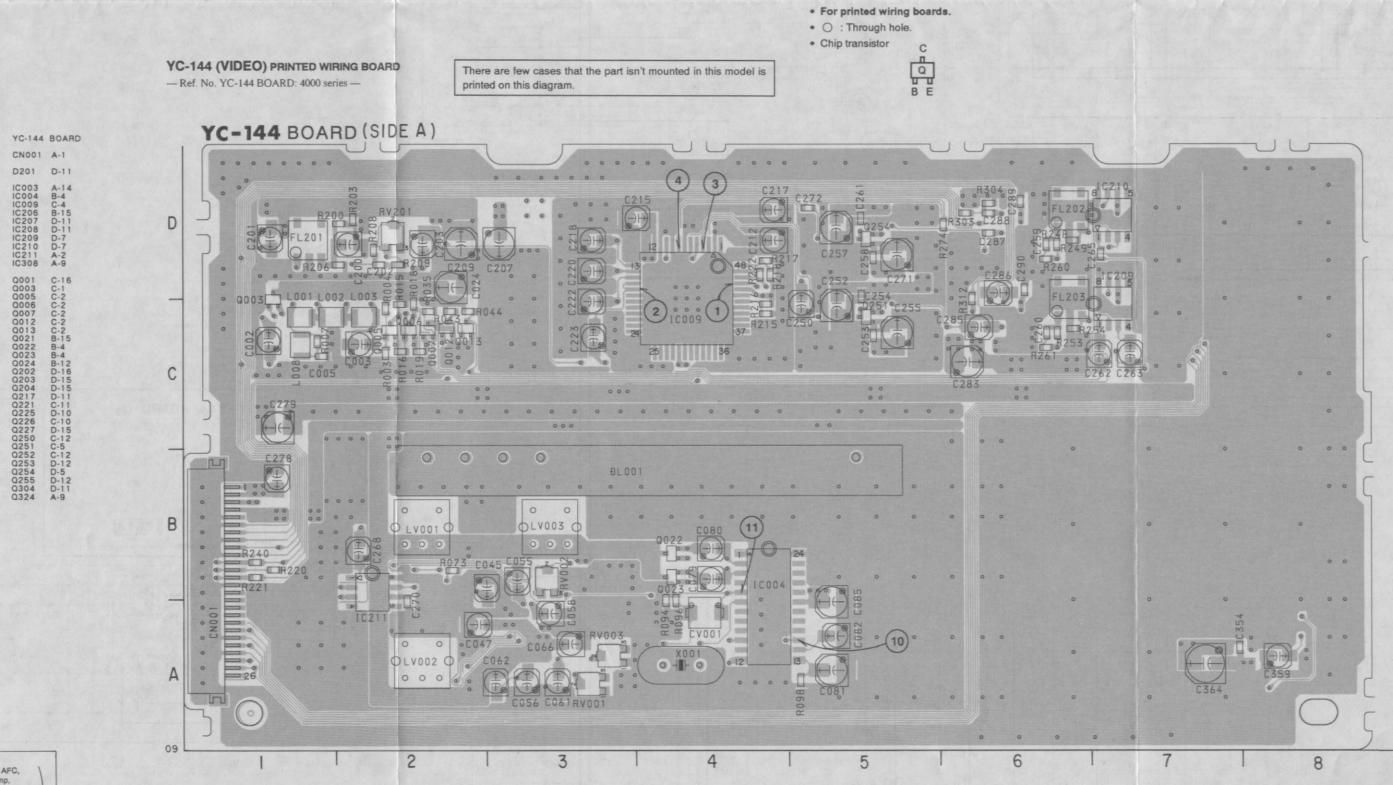


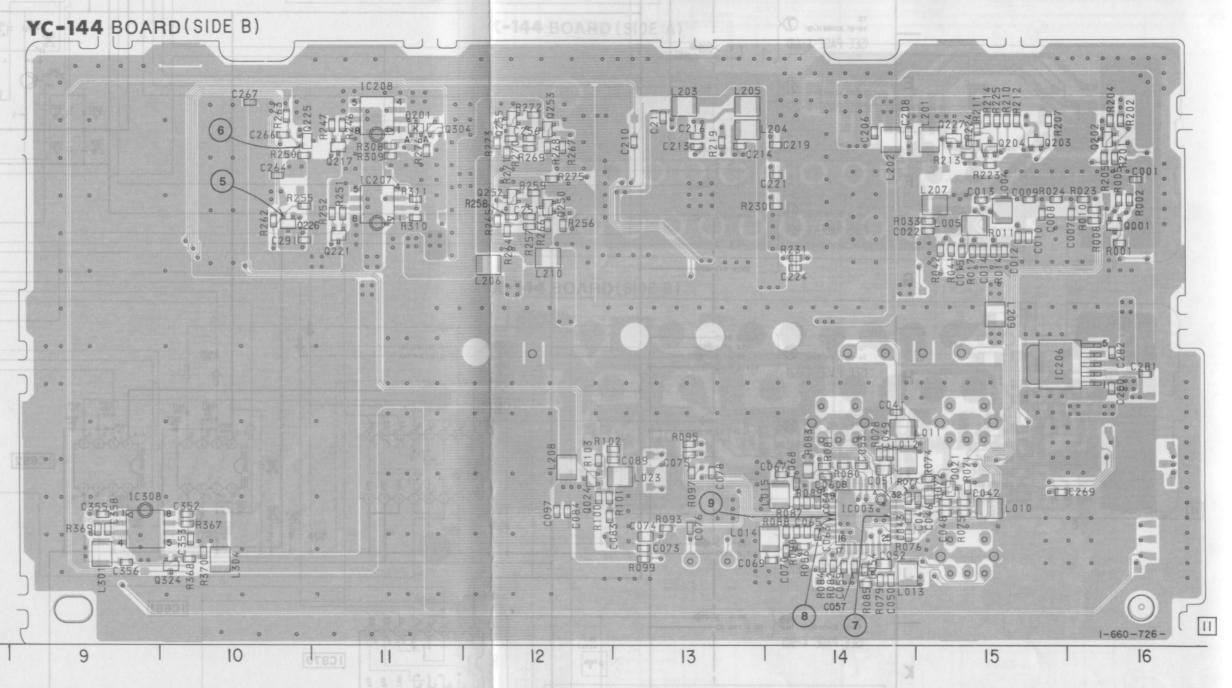












http://getMANUAL.com

